



A NEW BREED OF INTELLIGENT TUTORS
FROM WORCESTER POLYTECHNIC INSTITUTE

WPI

A NATIONAL CHALLENGE, A LOCAL OPPORTUNITY

WORKING TOGETHER, WE CAN TRANSFORM
HOW STUDENTS LEARN MATH AND SCIENCE,
AND HOW SCHOOLS MEASURE THEIR PROGRESS.



INNOVATIVE educational technology developed by Worcester Polytechnic Institute and piloted over the past six years in Worcester County schools is proven to dramatically improve education. Now, WPI aims to transform the educational process for math and science in every school where there is interest. So far, that's every school that has been introduced to the concept.

Called ASSISTments, this web-based system blends tutoring assistance and performance assessment, giving students the personalized guidance they need

in classwork and homework, and during testing while generating real-time progress reports to teachers. As the system "learns" more about students' skills, it becomes an even better tutor and assessment tool, giving teachers valuable data to drive differentiated instruction.

IN AWARD-WINNING RESEARCH BASED ON EXTENDED USE, ASSISTMENTS HAS BEEN SHOWN TO SIGNIFICANTLY IMPROVE BOTH TESTING AND LEARNING, PROVING THAT EFFECTIVE INSTRUCTION AND EFFECTIVE TESTING CAN GO HAND IN HAND.



WPI will provide professional development, donate software licenses, and assure sustainability for the long-term use of ASSISTments. The next step is to expand its use across the commonwealth, including advising administrators on implementation and training teachers to adapt and use ASSISTments in their classrooms. From there, the vision is to revolutionize how math and science are taught nationwide, essential for the United States to remain competitive on the global stage.

ASSISTments tutors children, can be adapted to teachers' objectives and federal and state requirements (MCAS), and provides data to drive instruction.

COUNT THE WAYS

1/2 letter grade increase in math, on average

6 years of pilot use in real classrooms

6 months post-instruction, students demonstrated mastery of critical science skills

10 skills and sub-skills tracked in alignment with National Science Education Strands for inquiry.

25 Massachusetts school districts

30 dollars per student license, donated by WPI

236 teachers using the system

137 math skills tracked in alignment with Common Core standards

11,500 students have a smarter way to do classwork and homework

\$9.5 million in grants received from the National Science Foundation, the U.S. Department of Education, and other agencies for both Math and Science ASSISTments



IN THE CLASSROOM

“When we previewed **Science ASSISTments**, we gave WPI feedback to adapt content to better meet the needs of student subgroups. They came back with just what we asked for. That was enormous—they are really interested in how teachers work and what we know. If I didn’t see a benefit for my kids, I wouldn’t be doing it—and now I know that’s what it’s all about for WPI, too.”

Robin Scarrell, Science Department Head, Forest Grove Middle School, Worcester, Massachusetts

“Using **Math ASSISTments** has made class run much more efficiently. It highlights areas of comprehension and misconceptions that need to be readdressed. The instant feedback (to the student) creates a determination to correctly solve the problem. This is a very rich learning experience and the students end up taking away the correct methodology to solving a problem.”

Courtney Mulcahy, Teacher, Oak Middle School, Shrewsbury, Massachusetts

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