



Achieve

**American Diploma Project  
Algebra I End-of-Course Exam  
Fact Sheet**

**Background**

The American Diploma Project (ADP) Network includes 35 states that are dedicated to making sure every high school graduate is prepared for college or a career. Together, Network members are responsible for educating nearly 85% of all U.S. public school students. In each state, governors, state superintendents of education, business executives, and college and university leaders are working to restore value to the high school diploma by raising the rigor of the high school standards, assessments and curriculum and better aligning these expectations with the demands of postsecondary education and the workforce.

In May 2005, leaders from the ADP Network States began to explore the possibility of working together, with support from Achieve, to develop a common end-of-course exam in Algebra II. These states were planning to require or strongly encourage students to take Algebra II, or its equivalent, in order to better prepare them for college and careers, as Algebra II, or its equivalent, is a gateway course for higher education and teaches quantitative reasoning skills important for the workplace. State leaders recognized that using an end-of-course exam would help ensure a consistent level of content and rigor in classes within and across their respective states. They also understood the value of working collaboratively on a common test: the potential to create a high quality test faster and at lower cost to each state, and to compare their performance and progress with one another.

**Contract Awarded**

In March 2007, the contract was awarded to Pearson Education Measurement who developed the test to meet the specifications agreed upon by the participating states. Since awarding the contract, six additional states have joined the partnership, bringing the total number of participating states to fifteen — **Arizona, Arkansas, Florida, Hawaii, Indiana, Kentucky, Maryland, Massachusetts, Minnesota, New Jersey, North Carolina, Ohio, Pennsylvania, Rhode Island and Washington.**

In December 2007, a subset of the Algebra II Consortium states, with support from Achieve, began to consider developing a common Algebra I end-of-course exam. The development of the ADP Algebra I End-of-Course Exam was a natural extension of the Partnership effort and was designed to support the goals of the Algebra II initiative. The exam standards that were created are vertically aligned with the Algebra II exam to indicate readiness for advanced mathematics courses.

Pearson is now developing a test to meet the specifications agreed upon by the participating states. At this time, 8 states are involved in the development of this Algebra I exam—**Hawaii, Kentucky, Maryland, Minnesota, New Jersey, North Carolina, Ohio, and Pennsylvania.**

**As an extension of the ADP Algebra II End-of-Course Exam, the ADP Algebra I End-of-Course Exam serves similar, parallel purposes:**

1. ***To improve curriculum and instruction—and ensure consistency within and across states.*** The exam will help classroom teachers focus on the most important concepts and skills in an Algebra I, or equivalent, class and identify areas where the curriculum needs to be strengthened. For schools administering both exams, the Algebra I Exam will compliment the Algebra II Exam and will help ensure a compatible, consistent and well-aligned Algebra curriculum. Once standards are set teachers will get test results back within three weeks of when the exam is administered, which will provide sufficient time to make the necessary adjustments for the next year's course.
2. ***To help high schools determine if students are ready for rigorous higher level mathematics courses.*** Because the test is aligned with the ADP mathematics benchmarks, it will measure skills students need to succeed in mathematics courses beyond Algebra I. High schools will be able to use the results of the exam to tell Algebra I students, parents, teachers and counselors whether a student is ready for higher level mathematics, or if they have content and skill gaps that need to be filled before they enroll in the next mathematics class in their high school's course sequence. This information should help high schools better prepare their students for upper level mathematics, which might include passing high school exit exams or state mathematics graduation exams. This will reduce the need for multiple retakes of courses or exams needed to graduate, hopefully avoiding remedial courses designed to review Algebra I skills and concepts.
3. ***To compare performance and progress among the participating states.*** Having agreed on the content expectations for courses at the Algebra I level, states are interested in tracking student performance over time. Achieve will issue a report each year comparing performance and progress among the participating states. This report will help state education leaders, educators and the public assess performance, identify areas for improvement and evaluate the impact of state strategies for improving secondary math achievement.

**Exam Content and Format**

The Algebra I End-of-Course Exam will consist of Algebra I skills and concepts, which will be taken by students across participating states.

**Content:** The ADP Algebra I EOC Exam will cover a range of algebraic topics that are typically taught in an Algebra I course. These include: 1) Operations on Numbers and Expressions 2) Linear Relationships 3) Non-linear Relationships and 4) Data, Statistics and Probability.

Successful students will be able to:

- demonstrate conceptual understanding of the properties and operations of real numbers with emphasis on ratio, rates, and proportion and numerical expressions containing exponents and radicals
- operate with polynomial expressions, factor polynomial expressions and use algebraic radical expressions
- analyze, represent and graph linear functions including those involving absolute value and recognize and use linear models
- solve and graph linear equations and inequalities and will be able to use them to represent contextual situations
- solve systems of linear equations and model with single variable linear equations, one- or two-variable inequalities, or systems of equations
- demonstrate facility with estimating and verifying solutions of linear equations, making use of technology where appropriate
- represent simple quadratic functions in multiple ways and use quadratic models, as well as solve quadratic equations
- make connections to algebra through the interpretation of linear trends in data, the comparison of data using summary statistics, probability and counting principles, and the evaluation of data-based reports in the media

**Number of Items:** 47 operational items

**Item Types:** 40 multiple-choice (1 point each), 5 short answer (2 points each), and 2 extended response (4 points each)

At least 30% of the student's score will be based on the short-answer and extended-response items.

**Times:** Although untimed, two testing sessions approximately 60 minutes in length are recommended; one session with a calculator and one without

**Medium:** Paper and Pencil Testing  
Online Testing

### **Item Development**

The test items for the ADP Algebra I EOC Exam are being developed by Pearson. Each item will be reviewed by postsecondary mathematics faculty and mathematics teachers from the participating states. The items are aligned with the content specifications that were developed by a committee of representatives from each of the original eight states, which in turn are aligned with Achieve's ADP mathematics benchmarks. To view the ADP Algebra I End-of-Course Exam Content Standards, please visit <http://www.achieve.org/ADPAssessmentConsortium>.

### **Performance Levels**

Across the states, the Exam will be scored using a set of common performance levels, which will be determined by the participating states in conjunction with Achieve after the Spring 2009 administration. This will help ensure consistency of expectations regardless of where a student attends school.

### **Testing Windows**

2009 End-of-Spring Testing:

May 1-June 12, 2009

### **How States Will Use the Exam**

All participating states view the Exam as an opportunity to improve mathematics instruction and curriculum and to provide teachers and students with the tools they need to be successful. However, each participating state will determine how it will use the ADP Algebra I EOC Exam. In some states, all students who take Algebra I will be required to take the Exam. In other states, decisions about the Exam will be left up to districts, some of which may require students to take the Exam as part of an Algebra I course or its equivalent. Lastly, some states have made the exam a part of state-wide initiatives.

### **Beyond the Algebra I EOC Exam**

The states will also consider additional ways in which they can work together to provide their schools with tools and strategies necessary to improve secondary mathematics achievement – such as curriculum, instructional strategies, formative assessments, professional development, and support for students. Interested states may also decide to work collaboratively to develop additional EOC Exams, for example in Geometry and Trigonometry.

### **Joining the ADP Algebra II Consortium**

Additional states that want to use this exam *and* participate in the broader mathematics consortium – including comparative reporting of performance and progress and working with other states to improve secondary mathematics – can do so at any time. For further information contact Tracy Halka at Achieve, [thalka@achieve.org](mailto:thalka@achieve.org) or (202) 419-1575.