



RESEARCH STUDY GRANT INFORMATION SHEET AND APPLICATION

The ALEKS Research Study is an exciting opportunity for your students to improve their math skills through the use of ALEKS course products and to contribute to the development and further improvement of ALEKS.

What is ALEKS?

ALEKS (**A**ssessment and **L**earning in **K**nowledge **S**paces) is a web-based, artificially-intelligent learning and assessment system that provides research-based, standards-aligned, rigorous content and utilizes diagnostic and progress monitoring assessments to inform instruction. ALEKS has been successfully used by millions of students in the U.S. and abroad from the third grade through higher education in more than fifty academic subjects. ALEKS achieves better learning outcomes by meeting the exact needs of each student, targeting and filling gaps in knowledge, and providing a completely individualized and optimized learning path. As a result, ALEKS students are much more motivated, have a deeper level of understanding of course material and a greater degree of success. Additionally, teachers report improvements in standardized test scores, higher pass rates, higher confidence, and increased achievement. For more information, please go to <http://www.aleks.com/k12/implementations> and http://www.aleks.com/k12/success_stories.

Application Process

ALEKS Corporation has contracted with an experienced, independent research and evaluation firm to conduct a rigorous scientific study of the use of ALEKS at the middle school level in U.S. K-12 school districts. ALEKS will be evaluated to quantify its effect on student mathematics achievement in middle school, to examine teacher and student attitudes, as well as to inform design improvements and best practices methodology. This study will be conducted using the highest possible standards and with the intention of meeting the evidence requirements necessary for submission to and publication by high-quality education research journals.

All research study grant program applicants must complete, in full, the attached ALEKS Research Study Grant Application and submit the application with the additional requested documents.

Applications will be accepted until **Thursday, May 31, 2012 at 8 PM Eastern Standard Time**. All applications must be submitted by email researchstudy@aleks.com. All attachments should be submitted as PDF documents. Any applications submitted after the deadline will be accepted at the discretion of ALEKS Corporation.

Awarded applicant(s) will be notified in writing by Friday, June 15, 2012. Decisions will be made at the discretion of ALEKS Corporation upon the advice of the independent research firm. ALEKS Corporation reserves the right to accept or reject all or any part of an application and waive minor application formalities/technicalities.



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The total grant award will be in the form of ALEKS 40-week (or 12-month) subscriptions and stipends, with an estimated total value of approximately \$80,000 to \$180,000. Please see the section “Research Study Benefits and Incentives” for additional details.

Research Study Grants are limited and are awarded at the discretion of ALEKS Corporation. Applicants who do not receive grants are eligible for the alternative ALEKS Pilot Program.

ALEKS Pilot Program

School districts that cannot meet the participation requirements listed below may be eligible for the alternative ALEKS Pilot Program, which awards smaller grants for ALEKS pilot implementations (estimated value of grants are between \$1,500 to \$4,500). Please contact your local sales representative for more information. To locate the contact information for your area, go to http://www.aleks.com/k12/adoption_information and click on your state.

Applicants not accepted to the ALEKS Research Study Grant Program will automatically be considered for the alternative ALEKS Research Study Program.

Research Study Grant Participation Requirements

To be considered, all Applicants must:

1. Commit to using ALEKS as a supplemental math instructional program for at least three hours per week or as a full-time math intervention or core instructional program (75% instructional time or at least four hours per week, whichever is greater).
2. Commit to the participation of a minimum of 40 teachers (20 teachers each for the “experimental” and “control” groups). We would prefer between 50-60 teachers. This total can include multiple schools in one district.
3. Commit to sharing student data for use in the study. Unique identification numbers are used to protect student privacy.
4. Agree to allow the publication of the study results in selected educational journals and in What Works Clearinghouse at the discretion of the independent research firm and ALEKS Corporation.
5. Agree to implement fully by September 10, 2012 and continue to May 25, 2013 or the end of the full school year, whichever is later.
6. Agree to random assignment of teachers and classes to the ALEKS experimental and control groups.
7. Provide letters of Implementation Commitment by vested personnel, i.e., District and Site Administrators, Coaches, Principals, Teachers, etc.

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8. Complete the ALEKS Research Study Grant Application in full and provide all the requested additional information, including the narrative, background and experience of the teachers involved, etc.
9. Meet the minimum system requirements.

	PC	Macintosh
Operating System	Windows	MacOS 10.3+
Processor	Any	Any
RAM Memory	64+MB	64+MB
Browser	Explorer 7.0+, Firefox 3+, Chrome 4+	Safari 3+
Screen Resolution	800x600	800x600
Modem Speed	56+ kbps	56+ kbps

To use ALEKS, your browser must have Java enabled. You can install Sun Microsystems' JAVA VM from the ALEKS website at www.aleks.com/support/sun_jvm

Research Study Details

The target group for this research study is the students of one middle school grade level in one school district. We would prefer to see applications proposing a target group of either 7th or 8th grade students. However, we will also consider proposals for 6th grade students as long as all 6th grade students are classified as "middle school" students in your district.

Teachers will be randomly assigned to either ALEKS (the "experimental group") or the "business as usual" instructional materials in use (the "control group"). Selection of teachers into the control and experimental groups will be the result of a systematic and rigorous randomization procedure that will assign 50% of the math teachers in the target group to use ALEKS with their students. The remaining teachers will follow the established curriculum per their regular practice.

To the extent possible, the ALEKS program and all instruments used to collect study data will be implemented by school personnel, with the assistance of the researchers, as part of normal educational practice. **Student identities will be kept confidential, and study results will only be reported in the form of summarized group data.**

Prior to the start of the study (which will most likely coincide with the beginning of the school year), the researchers will conduct a study orientation for all participating teachers and send out information packages about the study. ALEKS Certified Trainers will provide as much training on ALEKS as is necessary to ensure implementation with fidelity at all participating schools in the district.

Research Study Benefits and Incentives

- For the duration of the research study, the students in the ALEKS experimental group will receive complimentary 40-week or 12-month subscriptions to ALEKS. After the study is completed, the school



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district will receive complimentary ALEKS 40-week or 12-month subscriptions for all students in the participating grade level for the next school year. All subscriptions are awarded at the discretion of ALEKS Corporation.

- Students will receive a token prize for returning their parental consent forms, whether or not parents give consent.
- Teachers implementing ALEKS will receive a \$250 stipend for training and planning, as well as completing surveys and data collection requests. Those teachers not implementing ALEKS will receive a \$150 stipend for completing data collection requests. Stipends will be presented in a form that is consistent with district policy.
- Teachers using ALEKS with students receive their own complimentary ALEKS Student Accounts that can be used for online, continuous mathematics learning in more advanced courses and, potentially, as a component of their professional development. ALEKS offers convenient, self-paced learning that allows teachers to use any ALEKS course product to effectively brush up on math skills or widen their knowledge using any of the ALEKS courses offered in other disciplines. With ALEKS, teachers can add higher level mathematics courses to their teaching portfolios (e.g. PreCalculus, Trigonometry), and as part of their preparation for mathematics certification tests. Some states and districts have used ALEKS as part of their formal professional development programs and as a means of increasing success rates in the mathematics exams necessary to achieve certification and credentials.
- Site coordinators and/or administrators (one per school) will receive a \$300 stipend for helping to organize site visits, responding to information and data requests, and communicating with the researchers to ensure consistent program implementation. Stipends will be presented in a form that is consistent with district policy.
- School-level summaries of the pretest and baseline survey data will be provided to the school district. The school division will be provided with a copy of the final report in approximately November of 2013.
- Teachers implementing ALEKS will be provided with ample on-site professional development and ongoing technical and customer support for the duration of the study. After the study period, all teachers using ALEKS will be provided with on-site professional development from an ALEKS Certified Trainer as well as continued technical and customer support. During and after the study period, teachers and administrators will receive professional consultation on which implementation models are most likely to result in the best learning outcomes for each school.
- As long as teachers are implementing ALEKS and students have active subscriptions (whether in or out of the study period), ALEKS Corporation also will provide the following additional resources to teachers:
 - » Daily Live Webinar Q&A Sessions/Training – ALEKS Corporation offers daily WebEx Q&A/training sessions. An ALEKS Certified Trainer is available to answer questions and to demonstrate features of ALEKS. The daily schedule is posted in the K-12 Training Center on the ALEKS website.

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- » ALEKS Training Center – In addition to the daily WebEx training sessions, the ALEKS Training Center has unlimited “anytime/anywhere” access to free, pre-recorded tutorials. Teachers do not need to confirm or pre-register for any of the training sessions.
- » Implementation Strategies Database – Teachers can learn more about how other educators have successfully implemented ALEKS to achieve dramatic learning outcomes by visiting the ALEKS Implementation Strategies Database. This database allows teachers to quickly search for successful ALEKS implementations by grade level, computer scenario, student purpose, state, or keyword that match their similar teaching conditions. Teachers and administrators can also submit their own successful implementations of ALEKS for considered inclusion in the Implementation Strategies Database.
- » ALEKS Community - On this interactive forum, teachers can share ALEKS strategies and information with their colleagues. Login with your ALEKS login name and password.

Sample Timeline of Research Study Activities

Below is a proposed timeline for the activities of the study. Again, we will work with the school district to ensure that these study activities cause the least amount of disruption to the schools’ daily activities.

Month	Research Study Activities
June-July	<ul style="list-style-type: none"> • School district, ALEKS, and research firm hold conversations with middle school principals and other key school math leaders to introduce study. • Research firm works with school district to determine appropriate student data masking methods.
August	<ul style="list-style-type: none"> • Random assignment of math teachers to study conditions (“ALEKS” or “control”) • Study information sent to all middle school teachers. • ALEKS training session for teachers assigned to ALEKS. • Teacher Survey on confidence in teaching math and perceived value of software for instruction administered to all experimental and control group math teachers.
September	<ul style="list-style-type: none"> • Parent Consent Forms for the student survey go home; students receive small token prize for returning form. • Research firm receives spring 2012 state standardized math test scores and demographic data for students in the experimental and control groups, and participating teachers’ spring 2012 class average state standardized math test scores. • All students in the participating grade level are pretested using a norm-referenced math assessment (ITBS Math from Riverside Publishing, TOMA-2 from Pearson, or another assessment as mutually-agreed upon); students with parent consent are also administered a survey of math efficacy beliefs and attitudes toward math. • Use of ALEKS software (or “business as usual” software program[s]) begins.
October	<ul style="list-style-type: none"> • Teachers complete short web-based Software Implementation Survey to provide



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Month	Research Study Activities
	researchers with feedback on implementation.
November	<ul style="list-style-type: none"> • Research firm receives "business as usual" software and ALEKS usage data by student and teacher for first grading period. • Research firm provides school district with results of math pretest and attitudes survey for the division overall and by school.
December	<ul style="list-style-type: none"> • Teachers complete short web-based Software Implementation Survey to provide researchers with feedback on ALEKS and the implementation of the efficacy study in their classes.
January	<ul style="list-style-type: none"> • All students with parent consent are administered mid-year survey of math efficacy beliefs, attitudes toward math, and satisfaction with math software. • Research firm receives "business as usual" software and ALEKS usage data by student and teacher for second grading period.
February	<ul style="list-style-type: none"> • Research firm conducts 2-day observations of a random subset of classes (1 day of regular curriculum and "business as usual" software use, 1 day of software use) to assess student engagement.
March	<ul style="list-style-type: none"> • Math teachers are interviewed by phone.
April	<ul style="list-style-type: none"> • Research firm receives "business as usual" software program(s) and ALEKS usage data by student and teacher for third grading period. • Teachers complete short web-based survey on perceptions of the math software program(s) they use, study implementation, and perceived value of software for instruction.
May	<ul style="list-style-type: none"> • State standardized test statewide administration. (The schedule will be adjusted for districts that administer statewide tests earlier in the year.)
June	<ul style="list-style-type: none"> • All students in the participating grade level are post-tested using the norm-referenced math assessment; students with parent consent are administered a survey of math efficacy beliefs, attitudes toward math, and satisfaction with the math software ("business as usual" software or ALEKS). • Research firm receives "business as usual" software and ALEKS usage data by student and teacher for fourth grading period. • Teachers provided with their stipends for participation.
July-September	<ul style="list-style-type: none"> • Research firm researchers obtain spring 2013 state standardized test scores. • ALEKS Corporation provides on-site training for all teachers on ALEKS.
October	<ul style="list-style-type: none"> • Research firm finalizes report. • Students will receive complimentary ALEKS 12-month subscriptions for the next school year.
November	<ul style="list-style-type: none"> • Study results are shared with school district. ALEKS Corporation and the research firm will prepare the report for submission to selected K-12 educational journals.



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About ALEKS Corporation

ALEKS Corporation is a leader in the creation of web-based, artificially intelligent, educational software. ALEKS assessment and learning technologies were developed over several decades by researchers at New York University and the University of California, Irvine, through several projects funded by the National Science Foundation, and are derived from Learning Space Theory, a field of research in mathematical cognitive science. Learning Space Theory is set forth authoritatively in Learning Spaces by Jean-Claude Falmagne and Jean-Paul Doignon (Springer-Verlag, 2011). This monograph is a revision and expansion of Knowledge Spaces (Springer-Verlag, 1999) and includes an examination of the mathematical basis for Learning Space Theory and its applicability to various practical systems of knowledge assessment (such as ALEKS). The mathematical areas used in Learning Space Theory are primarily Combinatorics, Probability, and Stochastic Processes. The research behind ALEKS is discussed briefly in non-technical terms in “The Assessment of Knowledge in Theory and in Practice”, which is available at http://www.aleks.com/about_aleks/research_behind.

ALEKS has been used successfully by millions of students in the US and abroad from the third grade through higher education in more than fifty subjects.

Our mission is to assist educators in dramatically improving learning outcomes through the delivery of superior and artificially-intelligent learning and assessment course products.

For additional information, visit www.aleks.com.

Contact Information

Please contact Terry Cheng of ALEKS Corporation by email at tcheng@aleks.com or by phone at (714) 245-7191, ext. 167 if you would like to discuss further your participation in this study.



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Please complete all parts of the application and provide the additional information requested. All applications with supporting documents must be submitted by Thursday, May 31, 2012 to researchstudy@aleks.com. See the ALEKS Research Study Grant Information Sheet for more details.

Part 1: Applicant Information

Today's Date: _____

Applicant Information

Applicant Name:	
Applicant Job Title:	Relationship to the District:
Contact Phone Number:	Contact Email:
Please provide the best times and method to contact you:	

District Information

District Name:		
District Address:		
City:	State:	Zip Code:
District Phone Number:	District Fax Number:	
District Website:	Grades Served:	
Number of Schools:	Total Current District Enrollment:	
District Contact Person:	District Contact Job Title:	
Contact Phone Number:	Contact E-mail:	



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Part 2: Participating Schools Information

Please complete this section for each school participating in the ALEKS Research Study. The contact person at each school should be the administrator responsible for coordinating study-related activities. Please also tell us which grades, classes, students, and teachers will be participating in the study. Use additional sheets as necessary.

School Name:			
Street Address:			
City:		State:	Zip Code:
School Phone Number:		School Fax Number:	
Grades Served:		Student Enrollment:	
Contact Person:		Contact Title:	
Contact Phone Number:		Contact E-mail:	
Grade	Class Name/Math Level (e.g, Pre-Algebra)	Estimated # of Students	Number of Teachers

School Name:			
Street Address:			
City:		State:	Zip Code:
School Phone Number:		School Fax Number:	
Grades Served:		Student Enrollment:	
Contact Person:		Contact Title:	
Contact Phone Number:		Contact E-mail:	
Grade	Class Name/Math Level (e.g, Pre-Algebra)	Estimated # of Students	Number of Teachers



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School Name:		
Street Address:		
City:	State:	Zip Code:
School Phone Number:	School Fax Number:	
Grades Served:	Student Enrollment:	
Contact Person:	Contact Title:	
Contact Phone Number:	Contact E-mail:	

Grade	Class Name/Math Level (e.g, Pre-Algebra)	Estimated # of Students	Number of Teachers

School Name:		
Street Address:		
City:	State:	Zip Code:
School Phone Number:	School Fax Number:	
Grades Served:	Student Enrollment:	
Contact Person:	Contact Title:	
Contact Phone Number:	Contact E-mail:	

Grade	Class Name/Math Level (e.g, Pre-Algebra)	Estimated # of Students	Number of Teachers



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School Name:		
Street Address:		
City:	State:	Zip Code:
School Phone Number:	School Fax Number:	
Grades Served:	Student Enrollment:	
Contact Person:	Contact Title:	
Contact Phone Number:	Contact E-mail:	

Grade	Class Name/Math Level (e.g, Pre-Algebra)	Estimated # of Students	Number of Teachers

School Name:		
Street Address:		
City:	State:	Zip Code:
School Phone Number:	School Fax Number:	
Grades Served:	Student Enrollment:	
Contact Person:	Contact Title:	
Contact Phone Number:	Contact E-mail:	

Grade	Class Name/Math Level (e.g, Pre-Algebra)	Estimated # of Students	Number of Teachers

Part 4: Implementation and Research Study Objectives

2a. Please provide a statement describing how ALEKS will be used to enhance your current mathematics curriculum plan. This document should 1) describe the goals and objectives you would like to see accomplished with this research study and 2) address the questions listed below.

- a. How will students be selected to participate in the research study? Please note that school districts that include an entire grade level of students, rather than just a select population, are preferred.
- b. What are the usual outcomes that these students are expected to achieve? What are the outcomes that you hope to achieve by integrating ALEKS into your curriculum?
- c. The independent research firm will administer pre- and post-tests to the students in the study. Will the school district also be administering one or more assessments to correlate student work with assessment results and to determine the potential success of the research study? If so, please describe the assessments (e.g., name of state standardized test, nationally normed test, benchmark assessment, etc.). If the assessment method is a standardized test, on what dates will it be administered?
- d. Will ALEKS be used as the core curriculum or as a supplemental resource?
- e. As a requirement of the study, the students in the ALEKS groups must use ALEKS in school for at least three hours a week if the program is a supplement or as 75% of instructional time if ALEKS is being used as the core curriculum. Can the teachers of the ALEKS groups commit to these usage requirements?
- f. If ALEKS is a supplement (and keeping in mind the three hours per week requirement), how often will students use ALEKS and how will class periods with ALEKS be structured?
 - Minutes per class period?
 - Hours per week?
 - Days per week?
 - Hours from home?
- g. Describe the structure and resources available to the classes that will be randomly assigned to the control groups (groups using the regular curriculum). Please include details on any software or other instructional materials used and amount of time spent on those materials in the control groups. Also, please describe the classroom activity in the control groups that is being replaced by ALEKS in the experimental groups.
- h. If home use is expected, how many of your students have computer and internet access at home? (A percentage or rough estimate is fine.) Are there alternatives to home use for students lacking a home computer with internet access (e.g., internet and computer access at a public library)?
- i. Please describe the computer scenario that will be used to achieve required levels of ALEKS usage. For instance, will students go to a computer lab, or are there laptop carts? What computer scenario applies to the control classrooms?
- j. Will ALEKS be assigned to students as homework? If so, what percentage of the student's homework responsibilities will be composed of ALEKS?
- k. How will student progress in ALEKS be built into the grading system? What percentage of a student's grade is work from ALEKS?
- l. Do mathematics teachers participate in PLCs (Professional Learning Communities) or any other formal teacher professional development and/or instructional strategies sharing program?

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Part 5: Technology Requirements

Who will be responsible for technical issues at the school or district? What are the levels of experience and/or training of the personnel who will be providing technical assistance? Please provide detailed contact information for the technical staff who will be involved in the ALEKS implementation. Will there be a lead technical person at each school?

What types of computers will be used? Please provide the hardware specifications, including operating system type, processor speed, RAM memory available, screen resolution, and model name. Please provide information on all the computers that may be using ALEKS.

What are the internet speeds and capabilities at each school and at the District? What internet browser will be used with ALEKS?

Please describe how your school district will address each of the technical issues below that may affect an ALEKS implementation.

- Bandwidth
(Required bandwidth is 20 kbps per student)
- Internet accessibility at school(s)
- Filter bypasses
- Firewall permissions
- ALEKS plug-in installations

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<p>Are there any technical or administrative challenges that could impact the performance of the research study (availability, hardware, security, firewalls, administrative privileges, network configuration)?</p>	
<p>Has ALEKS been added to your 'safe sender' list so teachers and administrators can receive their login and password information?</p>	
<p>Does ALEKS Corporation have the permission of your school district for our technologists to access the district's local area network (LAN) to troubleshoot technical or network issues? Please provide the specifications for your local area network(s).</p>	
<p>Are you able to meet or exceed the ALEKS system requirements as described in the ALEKS Research Study Grant Information Sheet?</p>	



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Part 7: Approvals *(Must be completed by an authorized district representative)*

As the authorized representative of the school district named below, I approve the application, I accept the requirements of the ALEKS Research Study and the implementation timeline, and I agree to provide the necessary information, including student data, to ALEKS Corporation and the independent research firm contracted by ALEKS Corporation to conduct this research study. I understand that the independent research firm has no formal affiliation other than as a contracted party to ALEKS Corporation.

I also affirm by signing below that I am authorized to enter into agreements on behalf of the school district.

On behalf of the school district named below, I also agree to the following participation requirements:

1. Commit to using ALEKS as a supplemental math instructional program for at least three hours per week or as a full-time math intervention or core instructional program (75% instructional time or 4 hours per week, whichever is greater).
2. Commit to sharing student data for use in the study. Unique identification numbers can be used to protect student privacy.
3. Agree to allow the publication of the study results in selected educational journals and in What Works Clearinghouse.
4. Agree to implement by September 10, 2012 and through the end of the full school year.
5. Agree to random assignment of teachers to the ALEKS experimental and control groups.

By:

Signature: _____

Printed Name: _____

Title: _____

Date: _____

School District: _____