

Implementation Strategies

Big Bear High School, Bear Valley Unified School District
Big Bear City, CA

Grade(s): 9 – 12

Scenario: Computer Lab, Home Access

Purpose: Credit Recovery, Exit Exam, Summer School, Improve State Test Scores

ALEKS Portion of Curriculum: 95%

Time Spent in ALEKS: 4.5 hours per week

ALEKS Course: Algebra Readiness, Foundations of High School Math, Algebra 1, High School Geometry

Deborah Burton, Teacher

We have used ALEKS for the past two school years. We introduced ALEKS at the high school last year to help improve our state test scores in Algebra 1. At the beginning of the first semester all of the F students from our Algebra 1 classes were put into one class of ALEKS for remediation. There were 22 students in the computer lab every day for 58 minutes. At the end of the year, 100 percent of these students had recovered a grade for first semester, and 65 percent have finished the course in a semester. Our Academic Performance Index (API) score went up 30 points last year, largely due to intervention with these students. We also allowed some students who wanted to move at an accelerated pace to use ALEKS. Two students finished Algebra 1, High School Geometry, and one semester of Algebra 2 in a semester. I also had two hospital students who were on ALEKS at home, one in PreCalculus and one in Algebra 2. The explanations in ALEKS were sufficient so that I only spent one hour per week with each student answering questions and reviewing. Both students were successful and my PreCalculus student scored an A on our class final. Due to budget cuts, we combined our 26 math students for summer school into one class with a teacher and an aid. The students were enrolled in ALEKS and could earn one or two semesters worth of work depending on their percentage. These 26 students completed 41 semesters of mathematics in their programs.

This year at the high school we are using ALEKS for our at-risk program for students who need credit recovery. I had these students for a quarter before we were on ALEKS and they were struggling because I had General Math, Algebra 1, and Geometry students in the same class with very few resources. Since January, all students are thriving and successful with none failing. One of my students has completed Algebra 1 with an A and this week completed Geometry with an A. The students are motivated to see their test percents move up, and I reward them for completing a fixed number of topics a week. These are very difficult students to keep motivated, but all have bought into ALEKS with great success.

I have taught high school math for 19 years now and feel that the courses ALEKS provides for my students are comparable to any course we teach at the high school. I believe that the real power is that ALEKS makes students improve their math facts. I am astonished at the amount of students in high school who do not know how to multiply and still finger count. Once they overcome this, they seem to take off in Algebra 1. My students love QuickTables and play them daily. I allow this as I have seen them improve in their ability to understand more difficult problems. I have two students from last year in summer school who could barely compute and this year one is has an A in Algebra 1 and is amazing at multiplying polynomials when he could not even multiply 4×7 before. The other is a young girl who is in Geometry and will finish her second semester this year. I do not believe these students could have passed in a traditional math course before.

I am hoping that next year we can introduce ALEKS as a core curriculum for students who wish to work on a computer at their own pace. I propose that if several classes are three or four students over class size, we move them into a lab with a math teacher and work on ALEKS. This will give us great flexibility as we can have multiple subjects in that one class. Our school was selected this year as a California Distinguished School and we have a greatly improved our CAHSEE scores this year.

Scenario

What challenges did the class or school face in math prior to using ALEKS?

Because we are a resort town, we have a high transient population and many students have failed to learn their math facts. ALEKS has improved all my students' basic math skills.

How many days per week is class time dedicated to ALEKS?

5 days per week.

What is the average length of a class period when ALEKS is used?

55 minutes.

Implementation

How do you implement ALEKS?

We aligned ALEKS to our textbook and work with the students in the lab every day.

Do you cover ALEKS concepts in a particular order?

No, the students love to choose their pie piece. I do notice that most finish whole numbers and integers first before moving on to Geometry.

How do you structure your class period with ALEKS?

I have each student working on their individual program, because I have many different subjects in one class and whole group instruction is impossible. I am able to work the room by roaming and helping each student exactly where they need it. I set the seating so that students who are approximately the same ability will sit by each other. They help each other often. The only time this is not allowed is during assessments. The peer help has been amazing. Many students do not want my help as they prefer reading the explanations on ALEKS to working with a teacher and this has worked well for them.

How did you modify your regular teaching approach as a result of ALEKS?

I do a lot more small group teaching and provide individual help. When I identify a concept that all students seem to struggle with, we work on it as a whole class.

How often are students required or encouraged to work on ALEKS at home?

Most of my at-risk students are not supported by computers at home.

How do you cultivate parental involvement and support for ALEKS?

I do not.

Grading

Is ALEKS assigned to your students as all or part of their homework responsibilities? If so, what part of the total homework load is it?

No.

How do you incorporate ALEKS into your grading system?

I give a quarterly grade based on their assessment progress. Semester one: A is 56 percent, B is 50 percent, C is 45 percent, and D is 40 percent. Semester two: A is 90 percent, B is 80 percent, C is 70 percent, and D is 60 percent. I also give a grade each week for number of topics completed; I expect 20 topics a week. We also have some standards quizzes.

Do you require students to make regular amounts of progress in ALEKS?

Yes, they must complete 20 topics per week and hopefully a test every 1–2 weeks.

Learning Outcomes

Since using ALEKS, please describe the learning outcomes or progress you have seen.

My 26 summer school students have completed 41 semesters of math using ALEKS. ALEKS has also helped out API scores increase 30 points in one year. I have many students who have never been successful in math who are asking if they can take next year's class on ALEKS because they been tremendously successful with it. My middle school Algebra Readiness students are asking if they can use ALEKS when they move to the high school.

Best Practices

Are there any best practices you would like to share with other teachers implementing ALEKS?

I love putting students next to other students who will help. They are amazing tutors for each other and it makes them both stronger. I often have class competitions to see which class can complete the most topics.