



How is ALEKS Used at SWVGS?

- A student is initially assigned to an ALEKS class based on:
 - previous mathematics courses completed,
 - New River Community College Mathematics Placement Test scores,
 - and the SWVGS mathematics course in which that student plans to enroll for the fall semester.
- Depending on the results of the initial ALEKS assessment, a student may be reassigned to a different ALEKS class.
 - Any student who scores below 15% will be moved to a lower level ALEKS course.
 - Any student who scores above 85% will be moved to a higher level ALEKS course.
 - This allows each student to work at his or her own readiness level and allows SWVGS to place students according to readiness.
- New SWVGS students are strongly encouraged to work on ALEKS during the summer prior to enrollment at SWVGS so that
 - they can continue to use and strengthen math skills during the summer.
 - they can adjust to solving problems without being dependent on a calculator.
 - they will be more prepared for the challenging mathematics and science courses at SWVGS.
 - they have an opportunity to advance to a higher level math course upon entering SWVGS.
- During the school year, students will be required to spend a minimum amount of time working in ALEKS each week and to master a minimum number of topics each week.
 - This requirement will be differentiated by class.
 - This will be graded as a homework assignment.
 - Students who master more than the minimum number of topics in a week will be given a grade for completing an optional assignment.
 - Students are allowed to work on ALEKS at SWVGS during their recitation time.
- Students taking College Algebra will use ALEKS to reinforce and master the same skills that are being taught in class.
- Students taking College Trigonometry will use ALEKS to review the algebra skills necessary for success, as well as to reinforce and master the same topics that are being taught in class.
- Students taking Calculus of One Variable will use ALEKS to review the algebra and trigonometry skills necessary for success in a calculus course.

Would You Like More Information?

- Visit www.aleks.com.
 - Learn more about how the program works.
 - Get a free trial of the program and try it for yourself.
 - Learn how other K-12 schools use ALEKS.
 - Learn how colleges and universities use ALEKS.
- Visit http://www.aleks.com/about_aleks/Science_Behind_ALEKS.pdf to read about the research behind ALEKS.



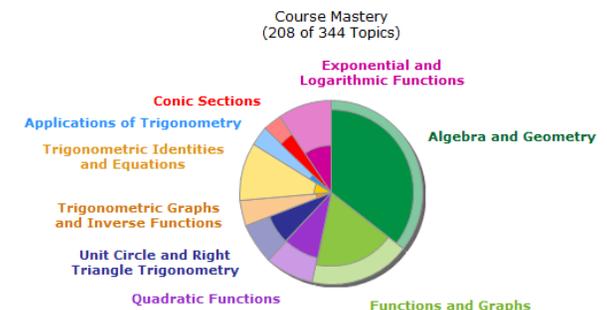
- Contact Sherry Pugh by email at spugh@swvgs.us or by telephone at 540-440-5515 to learn more about how ALEKS is used at SWVGS.



Using ALEKS in Mathematics Classes at SWVGS

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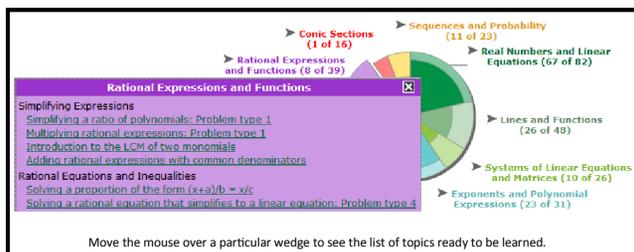
The ALEKS Pie



Using ALEKS in Mathematics Classes at the Southwest Virginia Governor's School

What is ALEKS?

- ALEKS stands for Assessment and Learning in Knowledge Spaces.
 - ALEKS is an artificial intelligence program developed through NSF funding.
 - ALEKS is completely online and can be used at any time from any computer with internet access.
 - ALEKS maintains a support team that can be easily accessed through the home page for help with any technical issues that may arise.
 - ALEKS charges a registration fee per student, and this fee is paid by SWVGS.
- ALEKS is based on the understanding that students learn mathematics in different ways and at different speeds.
- ALEKS uses a learning process that meets the exact needs of each student.
- ALEKS differentiates content by student readiness.
 - ALEKS uses adaptive questioning to determine what a student already knows and what that student is ready to learn. Thus students spend less time with re-teaching of topics.
 - ALEKS maintains a list of topics a student is ready to learn, and that student can choose the topic he or she wants to study next.
 - ALEKS will not offer a student a new topic until that student has a 90% chance of mastering the new topic.
- ALEKS differentiates for various learning styles.
 - ALEKS uses graphs and charts to help visual learners.
 - ALEKS offers step-by-step algebraic explanations for analytic learners.
 - ALEKS includes word problems for verbal learners.
- ALEKS continually assesses each student to ensure mastery and retention of each topic.



Why Use ALEKS?

- ALEKS questions are not multiple choice.
 - Students must understand how to “do the math” to get correct answers, often without a calculator.
- ALEKS differentiates to meet the varied needs of individual students.
 - Students can work at their own pace to master each topic.
 - No two students will see the same set of questions when working on the same topic.
 - At any time, students can click on the Explain button to see step-by-step instructions for solving the current problem. This aids students who need more structure and smaller leaps.
 - Students get instant feedback on problem solutions.
 - Students do not have to sit through repeated explanations of topics they already know and understand.
- Students are encouraged to set individual goals and establish their own timelines for meeting those goals.
- Students who work on ALEKS during the summer before their junior year could advance to a higher level mathematics course at SWVGS.
 - A student who masters at least 85% of topics in the ALEKS Precalculus course will be able to enroll in College Trigonometry at SWVGS even if that student has not taken a high school precalculus course.
 - A student who masters at least 85% of topics in the ALEKS Trigonometry course will be able to enroll in Calculus of One Variable at SWVGS even if that student has not taken a high school trigonometry course.
- Students and the teacher can communicate at any time using ALEKS’s messaging system.
- A teacher can easily monitor student progress through a variety of reports.
 - Student work and progress is closely monitored by a SWVGS mathematics instructor.
 - This instructor maintains regular contact with each student regarding ALEKS progress.



How Do Students Use ALEKS?

- When a student logs on for the first time, ALEKS provides a tutorial on using its drawing tools, using its math dictionary, and entering answers.
 - Students can return to this tutorial any time.
- Next the student takes an initial assessment so ALEKS can determine what that student knows and what that student is ready to learn.
 - As the student answers each question, ALEKS determines what question to ask next.
 - No two students will see the same set of questions.
- Then ALEKS generates a personalized student pie to visually compare the number of topics a student has and has not mastered.
 - The student chooses any wedge, chooses any topic from the ready to learn list for that wedge, and begins solving practice problems.
 - The student can see a detailed solution for any problem at any time.
 - The student uses the resource independently, but is able to get help from a SWVGS mathematics instructor in person, by email, or by telephone.
 - When ALEKS determines that the student has mastered the new topic, that topic is added to the student’s pie.
- A student can print a worksheet for additional practice or review at any time.
 - The worksheet is generated for that student based on that student’s current knowledge.
- Periodically ALEKS will give a cumulative assessment to determine what that student has retained.
 - The student is then prompted to review and relearn any topic not retained.

