





Arizona Academic Scholars Math and Language Arts Teacher Guide

This document can be found on the Arizona Academic Scholars Web site at azacademicscholars.org

The knowledge economy has produced an unprecedented and growing convergence of the skills that will be necessary for young adults to succeed whether they go to college or the workplace. Even automotive maintenance manuals are written at the reading level of a junior in college. The high school diploma is no longer the ticket to the middle class – students will need to be prepared to advance their education throughout their entire lives regardless of their career choices. Unequivocal research indicates they will not be able to do that unless they develop a strong foundation of academic knowledge at the high school level – an academic foundation grounded in demanding language arts, mathematics, science and social studies courses.

The Arizona business community, working through the Arizona Business and Education Coalition (ABEC) launched the Arizona Academic Scholars Initiative to encourage students to work harder and obtain the knowledge and skills they will need for the future. This initiative aims to motivate and prepare students in middle and high school to take and pass rigorous academic courses that research supports prepares them for the next step in their lives.

Based on significant research that says that rigorous high school course work is best for all students¹ whether they are bound for college or the workplace, the State Scholars initiative encourages students to take a specific sequence of high school courses that will provide them with the most options upon graduation from high school. The program is now in 20 states with seed funding from the U.S. Department of Education. In Arizona, the program is being supported with contributions from the state's business and education communities.

There are three (3) specific components of the Scholars Initiative; student presentations, incentives and supports in high school, and senior recognition. These modules are one of three presentation methods.

- Classroom Modules: Students in grades 6-11 are given classroom-based presentations twice per year,
- 8th Grade Presentation: Business volunteers make a presentation to 8th grade students as they prepare their four-year plan for high school. (http://www.azacademicscholars.org/presentations.cfm)
- Video: A 7 ½ minute DVD is available for educators to show students anytime during their high school years. This can be streamed at: http://cresmet.asu.edu/vcc/relatedresources.shtml.

These Arizona Academic Scholars' presentations inform students about the demands that will be placed on future employees and the need for students to begin preparing for their futures by working hard in middle and high school. These twelve electronic modules target students in grades 6-11 (two each year). Because the presentations end with assignments aligned to the Arizona Academic Standards, teachers are asked to replace a current lesson plan that has a less critical life message with one of these modules. In other words, the Scholars presentations replace a lesson, and are not something additional teachers need to teach. Modules are fun, student-friendly, and presented by a 'virtual business person,' and deliver and reinforce messages of hard work and high expectations.

In addition, Scholars schools will be given posters, brochures and access to numerous resources on the Arizona Academic Scholars Web site such as sample letters to parents as well as assistance from the Arizona Academic Scholars Project Manager for community presentations and business partnerships.

¹ Answers in the Toolbox. Clifford Adelman. 1999 and The Toolbox Revisited, Adelman. 2006.







The twelve presentation modules are deployed as follows:

Presentation Number	Presentation Name	Grade Targeted	Academic Content of Assignment in Module
6A	Get Down to Business	Early Middle School	Integrated Language Arts/Mathematics
6B	Only YOU are the Boss of You!	Early Middle School	Integrated Language Arts/Mathematics
7A	Be GREAT by Eight!	Early Middle School	Mathematics
7B	Transitions and Transcripts	Early Middle School	Language Arts
8A	Choose the Right Course	Grade Eight	Language Arts
8B	The Tassel is Worth the Hassle	Grade Eight	Mathematics
9A	School Counts!	Grade Nine	Language Arts
9B	You Can't Afford NOT To Get An Education	Grade Nine	Mathematics
10A	U Know U Can So Go 4 It!	Grade Ten	Mathematics
10B	Be the Competition!	Grade Ten	Language Arts
11A	To Market, To Market	Grade Eleven	Mathematics
11B	Welcome to Real World University	Grade Eleven	Language Arts

The presentation modules have been designed using Microsoft PowerPoint software.







Teachers who prefer to use the presentation modules as independent study opportunities or who want absentee students to catch up on the work can simply direct students to the website (www.azacademicscholars.org). Each module, and each of its various versions, includes a homework assignment that teachers in participating school districts agree to collect, grade, and count. Each assignment in each of the presentations has been aligned with the Arizona Academic Standards. The assignment is designed so that the student can process and internalize the important life lessons and other information contained in the presentation.

Each presentation module has been designed to fit within one 45-minute class period and the follow up assignment can be given as homework, or used as a class activity for a second period. However, educators who have used the lessons report that content of the presentation generates a significant amount of interest from students, who ask a plethora of questions, thus increasing the amount of class time that each module consumes. In fact, many teachers encourage appropriate extension activities that further connect the module with their academic subject matter. Spending additional class time to ensure that students begin taking their middle and high school years seriously can only offer dividends – for both students and teachers – over the course of many years.

Since the twelve presentations will be given over a six-year period in grades 6 –11 and in two different subject areas, there is redundant messaging embedded in most of the presentations. This technique is borrowed from a basic marketing precept that stresses repetition of an individual message to promote awareness. Thus every presentation 'grounds' the student with a half dozen opening slides that explain the business community's role in the program, and every presentation ends with the same call to action – students must properly prepare themselves for their future by taking demanding high school courses and developing a professional-level work ethic. The demanding high school curriculum presented to the student is the State Scholars sequence and is defined by widely referenced research. More information regarding the motivating research and participating states can be found at the State Scholars website (www.wiche.edu/statescholars).

The presentations are sequential, so students who view the presentations out of order, or miss earlier presentations, will be at a disadvantage. For that reason, students should be allowed the opportunity to view earlier presentations they may have missed, with dispensations for the assignments, if necessary. Extracurricular review can happen during study halls when the student has access to the program CD and a computer or students can access missed units online at the Arizona Academic Scholars Web site. (www.azacademicscholars.org).

The timing of the early middle school modules is less critical, but becomes more crucial as students mature. In grades 8-11, teachers should deliver the modules to students approximately one month prior to the selection of elective courses. You are strongly encouraged to offer a live evening parent/family presentation given to the community by representatives of the business community or the Arizona Academic Scholars Project Manager.

In essence, the goal is to saturate students and their parents with the "Scholars" message in order to increase their interest in selecting the Scholars course of study. The hope is that this will result in more students electing to be Arizona Academic Scholars therefore becoming better prepared for college, work, and life.







Presentation:	Module Six A
Title:	Get Down to Business
Recommended Class:	Sixth Grade Integrated Language Arts / Mathematics
Key Student Messages:	1) The business world is very competitive . Employers expect and count on their employees to work hard and be productive every day.
	2) Being prepared for the competitive world of business is all about working hard while in middle and high school and getting a good education. The first goal is to graduate from high school.
	3) 80% of employers will not hire people without a high school diploma and many people without a good education get into trouble. Over 80% of people in prison don't have high school diplomas.
	4) Hard work in middle school will help you succeed in high school . Hard work in high school will prepare you for college and work. Therefore, hard work in middle school will prepare you for the rest of your life. Success in school will help you achieve success in life and help you earn the money you will need for the lifestyle you want.
Assignment:	Survey your classmates. Ask them what they would like to be when they grow up. If they don't know, write that down, too. Draw a chart that represents the data your classmates provided.
	Pretend you are a newspaper reporter. You have to write an article on various types of jobs. Arrange to interview two adults you know who are not teachers.
	Ask each of those adults to provide you with detailed information about their jobs. Ask them about their titles, job responsibilities and how they spend their time at work. You will need to have good questions ready when you conduct your interviews.
	When you finish your interviews, you will know more about two different jobs. Write a story for your newspaper that precisely describes each of those jobs. Decide whether you would like to do the jobs described by those adults.
Arizona Academic Standards in Math and Language Arts Literacy:	Writing: Strand 1 – Writing Process, Concept 5 Publishing, PO 1 & 3 Writing: Strand 3 – Writing Applications, Concept 2 Expository, PO 1-3 Math: Strand 2 – Data Analysis, Concept 1 – Data Analysis, PO 1-4
Reading Level of Assignment Question:	6.3







Presentation:	Module Six B
Title:	Only YOU Are the Boss of You
Recommended Class:	Sixth Grade Integrated Language Arts / Mathematics
Key Student Messages:	1) Students who get good grades all the time are not luckier or smarter. They just work hard, study, pay attention in class, do their homework and read books every day.
	2) Challenging schoolwork helps the brain get 'smarter' and helps a student get good grades. As your body matures, so will your brain. You will be able to succeed at challenging schoolwork. Research shows that people who do not believe they can succeed, don't.
	3) Learning can be difficult and frustrating and failure is a part of life . But those people who can learn from their failures are the kind of people who will succeed and who employers want to hire.
	4) Success in middle school can lead to success in high school, college and high-paying jobs. Students can prepare for life by developing habits of learning - or trying - something new every day.
Assignment:	Identify five adults you know and trust. Do not include your teachers or your family members. Ask them what they do for a living. Then ask them what they think is more important – being smart or working hard. Report the results of your interviews with those adults to your classmates and teacher.
	Compile the results of all the interviews completed by each member of class: a. Count the number of adults who said it was more important to work hard. b. Count the number of adults who said it was more important to be smart. Determine which answer was most often given by the adults interviewed. Draw a chart that represents the data your classmates gathered.
	Write a report that summarizes what you have learned from the interviews. Explain how the data from the interviews influenced your opinion about how to prepare for the future.
Arizona Academic Standards in Math and Language Arts Literacy:	Writing: Strand 3 – Writing Applications, Concept 6 Research, PO 1 & 2 Math: Strand 2 – Data Analysis, Concept 1 Data Analysis, PO 1-4
Reading Level of Assignment Question:	6.6







Learn Do Earn Student Presentation Summary

Presentation:	Module Seven A
Title:	Be Great by Eight!
Recommended Class:	Seventh Grade Mathematics
Key Student Messages:	1) Competition for a good job starts in middle school. Students who do well in middle school will do better in high school, and doing well in high school leads to success in life.
	2) As in nature, only the fittest survive , and the 'fittest' are those people who are the best educated. A good education can lead to good paying jobs.
	3) It is important to work hard, do homework, and be successful in school. Research shows that adults who did no homework while they were in high school made 35% less money every year than those who did fifteen hours of homework each week.
	4) Education is the key to good jobs and good wages . People who have more education earn more money and can buy more things. And the sequence that builds success starts in middle school.
Assignment:	Meet Donna and Sue. They go to the same school and are great friends. In high school, Donna had a great time, partied hard and never did any homework. Sue had her own style and had a great time too, but kept her focus on her academics. Sue did about 15 hours of homework every week. Sue eventually learned to dress more appropriately and accepted a job with an annual salary of \$53,000. Based on what you learned in this presentation, how much would Donna's salary be?
	Assume that over time, neither Donna nor Sue received any increases in salary. How much additional money does Sue earn in five years? How about over the course of ten years?
Arizona Academic Standards in Math and Language Arts Literacy:	Math: Strand 1 – Number Sense, Concept 2 Numeric Operations, PO 3,4,7,10 Math: Strand 2 – Data Analysis, Concept 1 Data Analysis, PO 7 & 8
Reading Level of Assignment Question:	6.4







Presentation:	Module Seven B
Title:	Transitions and Transcripts
Recommended Class:	Seventh Grade Language Arts
Key Student Messages:	1) Technology is changing the job market and the skills that workers will need to succeed. Most of the jobs that will be available in the future will require a college degree.
	2) It is important to take challenging courses that will prepare the mind for the job market of the future . Difficult courses make the brain think differently, building brainpower and making future learning easier.
	3) Academic history starts in middle school with transcripts. Middle school performance will determine placement in high school, and high school performance will be used as criteria for college admissions and job readiness.
Assignment:	Make a list of five goals you believe all students should have in middle school.
	Share these goals with your classmates. List all the goals on the board. Narrow down the goals until the class has selected five goals that you and all your classmates agree are critically important for future success.
	Come up with three statements that clearly define why each of the five goals is important.
	Then use some or all of those fifteen reasons to write a letter to your friend convincing her that middle school performance is important.
Arizona Academic Standards in Math and Language Arts Literacy:	Writing: Strand 1 – Writing Process, Concept Prewriting, PO 1-5 Writing: Strand 3 – Applications, Concept Functional Writing, PO 3
Reading Level of Assignment Question:	6.4







Presentation:	Module Eight A
Title:	Choose the Right Course
Recommended Class:	Eighth Grade Language Arts
Key Student Messages:	Technological advance is driving society and the workplace resulting in a need for workers with increasingly high levels of skills , replacing low skill jobs with high skill jobs.
	Only 20% of employers will hire people who have only a high school diploma .
	Being prepared for tomorrow is all about working hard in high school and completing demanding courses in Science, Mathematics, and Language Arts.
	Taking rigorous course work, regardless of grade earned will result in being better prepared for college or the workplace, although colleges will also expect good grades. Research shows that the Scholars sequence best prepares students for the widest number of options in the future.
	The Scholars sequence can increase SAT scores, result in less remediation in college, and earn more in the workplace even if no college is present.
	Most direct correlation between course work in high school and statistical chance of earning a degree is found in high school mathematics . If a student takes:
	 Algebra I and Geometry = 23% chance of earning a Bachelors Degree Algebra II = 40% chance of earning a Bachelors Degree Trigonometry/Pre-Calc/Calculus = 62% chance of earning a Bachelors Degree
Assignment:	You just found out that your best friend elected to take general math instead of Algebra II. Write a letter to your friend persuading her to take Algebra II and stay in the Scholars sequence.
	Make sure you use information and statistics from this presentation in your argument.
Arizona Academic Standards in Math and Language Arts Literacy:	Writing: Strand W-E6 Formal Communications, Letter Writing, PO 1-3
Reading Level of Assignment Question:	8.8







Presentation:	Module Eight B
Title:	The Tassel Is Worth the Hassle
Recommended Class:	Eighth Grade Mathematics
Key Student Messages:	In just 15 years, over 84% of available jobs will require a college degree .
	Workers in the future will need more education just to maintain the lifestyle provided by their parents. More education = better jobs = less unemployment = more money = greater buying power. Details presented about various degrees available, degrees leading to various careers, and salaries anticipated with degrees held.
	 Details presented about college graduation, remediation and drop-out rates, and surveys of recent high school graduates: Over 65% of recent high school graduates who went to college say they would have worked harder in high school in hindsight. Over 77% of recent high school graduates who went directly to the workplace say they would have worked harder in high school in hindsight. Over 80% of students who took rigorous courses in high school feel that they were prepared for college.
	Best way to increase chances of college graduation and ability to earn more in the workplace is to work hard in high school, take rigorous courses, and take Scholars sequence.
Assignment:	Create a graph from the chart that shows salaries plotted against degree earned. Which degree produces the greatest increase in salary?
	Using the chart on average starting salaries, how much will a person earn in a lifetime if they have a high school diploma, Associate's or Bachelor's degrees?
Arizona Academic Standards in Math and Language Arts Literacy:	Math: Strand 2 – Data Analysis, Concept 1 – Data Analysis, PO 8 & 9 Math: Strand 3 – Patterns, Algebra, Concept 3 Algebraic Expressions, PO 4, and Concept 1 Patterns, PO 1-3
Reading Level of Assignment Question:	9.3







Presentation:	Module Nine A
Title:	Make Sure School Counts!
Recommended Class:	Ninth Grade Language Arts
Key Student Messages:	Taxpayers are giving students a gift of \$48,000 in the form of a high school education. Missing one day of school is a loss of \$67.00. Some habits of good students include not taking study halls, reading 10 - 25 books each year, expect two hours of homework every night.
	Good habits to learn for the future include being present and on time, finishing school in eight consecutive semesters, getting at least average grades, and doing more than the minimum necessary for graduation.
	Best way to increase chances of college graduation and ability to earn more in the workplace is to complete the Scholars sequence.
Assignment:	Imagine you have \$48,000 to spend on anything you would like. Develop a list of what you would buy or how you would spend the money. Make sure you clearly describe what you plan to purchase. Use the Internet or visit the library to research the exact prices of things that are on your list. Cite your references. And make sure you include extra costs associated with your purchases, for example, if you decide to buy a sports car, include the cost of gas and insurance. Maintain a running total of your purchases so that you do not exceed the amount that you have to spend. Now imagine that the government took away the \$48,000 you were going to spend and gave it to a school district to support the cost of a student's high school education. What kind of attitude and effort would you expect from the student in return for such a large gift? Write a letter to that student explaining what you expect in return for your money.
Arizona Academic Standards in Math and Language Arts Literacy:	Standard 3.2. Grade 8. Indicator B-3. Write reports and subject-appropriate nonfiction pieces across the curriculum based on research and including citations, quotations, and a works cited page. Standard 3.2. Grade 12. Indicator A-1. Engage in the writing process daily and for sustained amounts of time.
	Standard 3.2. Grade 12. Indicator B-5. Write a range of essays and expository pieces across the curriculum, such as persuasive, analytic, critique, or position paper.
Reading Level of Assignment Question:	7.9







Presentation:	Module Nine B
Title:	You Can't Afford NOT to Get An Education!
Recommended Class:	Ninth Grade Mathematics
Key Student Messages:	Review of a monthly budget for someone on a minimum wage salary.
	Prepare yourself to go to college even if you don't think you can afford it, because there are always ways to pay for an education: Pell grants, student loans, ROTC programs, work/study programs, employer subsidies.
	Particular emphasis given to a more 'non-traditional' approach to earning a degree, including county college to four-year track, completing a degree through courses at night, etc.
Assignment:	Look at the budget on Slide 10. Note the amount set aside for 'Rent.' Do an Internet search to determine what kind of apartment you could rent for that much per month. Make sure the apartment is located in an area where you would like to live. If you can't find a suitable apartment for the amount listed, then determine what a more appropriate number for 'Rent' expenses. Revise the budget accordingly. Now develop two more budgets for careers that require more education than the 'receptionist' in this presentation (who has, at best, a high school diploma).
	Using the budget in the presentation as a guide, develop two new budgets: one for an auto technician with a two-year Associate's degree and an annual salary of \$28,000; another for an entry-level manager with a Bachelor's degree in business and a starting salary of \$37,000.
	Compare all three budgets. Develop a graph that illustrates spending along various line items as income increases. Write a short essay that describes how the differentials in income among three levels of salary impact quality of life.
Arizona Academic Standards in Math and Language Arts Literacy:	Standard 4.5. All grades. Indicator A-2. Solve problems that arise in mathematics and in other contexts. Standard 4.5. All grades. Indicator A-3. Select and apply a variety of appropriate problem-solving strategies (e.g., "try a simpler problem" or "make a diagram") to solve problems.
Reading Level of Assignment Question:	10.0







Presentation:	Module Ten A
Title:	U Know U Can. So GO 4 IT!
Recommended Class:	Tenth Grade Mathematics
Key Student Messages:	Rigorous high school course work provides you with the most options after high school whether you are planning to go to college or not.
	Costs for a cross-section of New Jersey colleges are reviewed.
	Course entry requirements for sample New Jersey colleges are reviewed and comparisons made to Scholars sequence.
	Careers requiring some of the Scholars sequence material reviewed.
Assignment:	You have a group of friends who don't think they are 'college material.' They are taking 'easy' courses, and you have decided to register for the same classes they are. But when you went to your guidance counselor to change your schedule, she provided you with information from a study of students that you found quite surprising. She showed you a study in which researchers reviewed data from the school transcripts of over 3,000 students, and tracked their success in ninth grade courses related to their academic performance in eighth grade.
	The chart on the next slide outlines what the researchers found out in the study. Study the chart until you understand what the data are telling you. Then construct a histogram that illustrates the data in the chart. Write a short essay explaining what the information in the chart means. Pretend you are a school principal with just enough money to provide tutoring services for one group of students. Based on the data in the chart, what group of students would you select for additional academic help and why?
Arizona Academic Standards in Math and Language Arts Literacy:	Standard 4.4. Grade 8. Indicator A-2. Make inferences and formulate and evaluate arguments based on displays and analysis of data.
	Standard 4.5. All grades. Indicator A-2. Solve problems that arise in mathematics and in other contexts.
	Standard 4.5. All grades. Indicator A-3. Select and apply a variety of appropriate problem-solving strategies (e.g., "try a simpler problem" or "make a diagram") to solve problems.
Reading Level of Assignment Question:	8.9







Presentation:	Module Ten B
Title:	Meet/ Beat/ Be the Competition
Recommended Class:	Tenth Grade Language Arts
Key Student Messages:	Competition in business is fierce. Business must always control costs and hire the best-qualified people.
	Technology has changed the way companies operate. If qualified employees cannot be found in this country, employers will move those available jobs to countries where there is a skilled labor market.
	Students need to prepare now for any possible future with the Scholars sequence. Take the demanding courses in the Scholars sequence and be disciplined with your school and homework to ensure that you are ready for any career, any challenge, and any opportunity.
Assignment:	You may think you are a better writer than your classmates in English class. But how do you know that you – or they – are as good as the competition you will face when you try to get into college or apply for a job?
	Let's see if you can identify the grade level of the three essays we will show you, Discuss your thoughts with your classmates. (Students are given three stories to read and are asked to decide what grade level the passages represent, sixth grade, third grade, or college level. Then they are asked which passage is closest to their own writing ability. A word processing program is used to calculate the grade level of each of the passages and students are told that most word processing programs have a feature that will allow them to analyze their own work.)
	Are you surprised? Do you think you write at a level that is appropriate for your grade? Do your classmates write at an appropriate grade level? Discuss what you might do to improve your writing.
Arizona Academic Standards in Math and Language Arts Literacy:	Standard 3.3. Grade 12. Indicators A. 2, A.3, B.7, B.3, B.4. Support a position including multiple perspectives. Assume leadership roles in student-directed discussions, projects and forums.
Reading Level of Assignment Question:	7.0







Presentation:	Module Eleven A
Title:	To Market, To Market
Recommended Class:	Eleventh Grade Mathematics
Key Student Messages:	Individuals spend a lot of time on the job and therefore having a job you like is very important.
	But selecting a career is difficult because over 80% of the careers available to students haven't even been invented yet.
	Employers define the job market, not job candidates. You have to make sure you select a major that will give you the skills and knowledge that employers want.
	Developing a career strategy is more important than simply selecting a career. A career strategy takes into account what an individual likes, is good at, what the job market needs now and what it might need in the future.
	To prepare for any career or field you choose, it is important to take the demanding classes in the Scholars sequence.
Assignment:	As directed by your teacher, examine the Sunday edition of the largest newspaper in your area. Look at the Classified (Want) Ads.
	Develop a chart that organizes the featured Employment Ads by fields or careers. Which fields are most often advertised? Translate the chart into a graph that explains the data. Using a spreadsheet program would make this task much easier.
Arizona Academic Standards in Math and Language Arts Literacy:	Standard 4.3. Indicator C.1. Use functions to model real-world phenomena and solve problems.
Reading Level of Assignment Question:	6.7







Student Presentation Summary

Presentation:	Module Eleven B
Title:	Welcome to Real World University
Recommended Class:	Eleventh Grade Language Arts
Key Student Messages:	Continuing your education after high school is the best way to ensure your future success. But if you cannot or do not plan to attend college, you can advance your career and increase your salary with employer-sponsored training.
	You can learn in the 'real world' and earn more, faster, if you have completed rigorous course work in high school.
Assignment:	Interview a minimum of ten adults that you have in your life — NOT including your teachers, parents, grandparents or guardians. Interview people like your boss, neighbors, and friends' parents. Ask each person if he or she has a college degree.
	If the person you are speaking with does NOT have a college degree, ask them if they wished they did. Ask them how an education might have changed their careers and their lives. Write down their answers.
	If the person you are speaking with DOES have a college degree, ask them how they think the college degree helped them in their lives. If they say the degree made no difference, ask them why that might be so. Write a report on what you learned from your interviews with adults. In the report, share whether or not what you have learned from adults around you has changed or reinforced your plans for the future.
Arizona Academic Standards in Math and Language Arts Literacy:	Standard 3.2. Grade 12. Indicator D-6. Compile and synthesize information for everyday and workplace purposes, such as job applications, resumes, business letters, and college applications.
Reading Level of Assignment Question:	5.9

For more information, visit the following websites:

Arizona Academic Scholars at www.azacademicscholars.org Center for State Scholars at www.wiche.edu/statescholars/ Arizona Business & Education Coalition: www.azbec.org





