

SACRAMENTO STATE

PLUM: Using the Learning Management System to Empower Students in Entry-Level Math Courses

David Zeigler, PhD
Bridget Parsh, RN, EdD
Vanessa Newsome-Slade
Chevelle Newsome, PhD

Redefine the Possible™

Who are we?


- David Zeigler, PhD
Chair, Department of Mathematics
- Bridget Parsh, RN, EdD
Director, First Year Experience Programs
- Vanessa Newsome-Slade
Undergraduate Student, Math
- Chevelle Newsome, PhD
Dean, Graduate Studies



SACRAMENTO STATE

Executive Order 1110

- **Guiding Principles**
- The CSU is committed to providing students an equitable opportunity to succeed academically at the university and to providing rigorous instruction in general education written communication and mathematics/quantitative reasoning.
- Rigorous high school preparatory experiences in general education written communication and mathematics/quantitative reasoning prepare prospective CSU students for academic success.
- Successful completion of general education written communication and mathematics/quantitative reasoning courses in the first year of CSU enrollment establish a foundation for continuous learning.
- Freshmen in need of additional academic development are supported in the Early Start Program and in enhanced college-level, baccalaureate credit-bearing courses.
- CSU faculty provide academic support by making curricular modifications to existing courses, by developing new courses, or by introducing innovative instructional approaches that achieve appropriately rigorous student learning outcomes.
- General education written communication and mathematics/quantitative reasoning requirements completed at one campus seamlessly transfer to other CSU campuses.



SACRAMENTO STATE

EO 1110: changes

- Effective with this executive order, the English Placement Test (EPT) and the Entry- Level Mathematics (ELM) Test shall not be offered, and the EPT and ELM committees are discontinued.
- During the first academic year, unless the requirement has been completed, **freshmen shall enroll in general education written communication and mathematics/quantitative reasoning courses** appropriate to each student's major and skill level, as demonstrated by applicable systemwide standards



Sac State Info

- About 3900 first time college students each summer
- 8% math completion rate in the first year (2016)
- Math identified as obstacle to graduation
- English department developed online Directed Self Placement for first year English.
- >90% completion rate for English in first year



Who are today's incoming college students?

- <https://www.beloit.edu/mindset/2021/>
- First class born in 2000
- Think of themselves as consumers of college (\$\$)
- They have never had to watch a TV show at a scheduled time
- There has always been eBay and Google
- Bill Clinton has always been Hillary's aging husband
- Wifi is an entitlement



How does this effect engaging with them?

- They binge watch shows
 - Can't they just binge watch class?
- They don't pay for music
 - Why do they have to pay for books?
- They want to 'personalize' their education
 - How does math apply to my major?
- They want to 'hack' college
 - There has to be a short cut...where is it?
- There are things you don't know about them
 - You don't know everything



About Sacramento State

- 300 acres on river
- 30,000 students
- 1800 faculty
- Diverse
- Public
- In capital city




2018-2019 will be an exciting year...

- Implementation of EO 1110
 - Elimination of all remedial courses / ELM
 - Multiple measures used to place students into Categories
 - New Early Start models
 - Supplemental instruction; i.e. co-requisite, "stretch", etc.
 - Students shall enroll in their GE course within first year.
- New placement using ALEKS PPL




At Sacramento State...

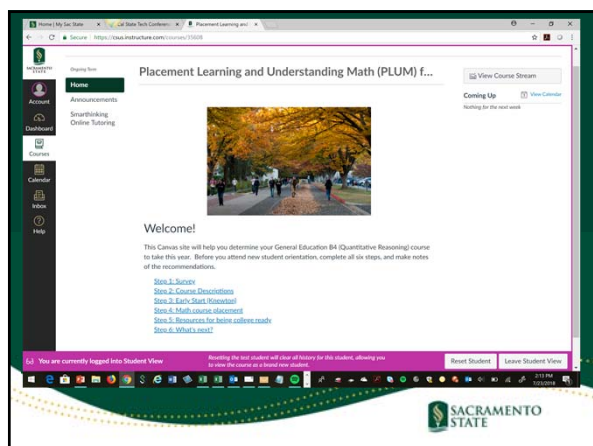
- Approximately 3900 first time college students for Fall 2018
- Increasing diverse student population
 - 3x EOP applications from Fall 2017 to Fall 2018
 - Geography
 - Out of state students tripled over 2012 – 2016
 - Foreign students more than doubled 2012 – 2016
 - (Math) Preparation
 - NCLB / Common Core
- How can we guide students to the “best” pathways for them?



What is PLUM?

- Guided system, consisting of a self-inventory and a QR activity, for all students to assess and improve their QR knowledge.
- Part of our University Plan to assess student math readiness to learn





Which of these majors are you interested in? Take your time on this question.

There is no wrong answer. You can change your major preference. It doesn't have to be what you applied with to Sac State.

Biology, Math, Chemistry, Physics, Geology, Computer Science, or Engineering

Liberal Studies or Child Development (to become an elementary teacher)

Business, Gerontology, Criminal Justice, Nursing, Kinesiology, Economics, FACS (e.g. Nutrition), Psychology, Social Work, Sociology, Communication Sciences and Disorders

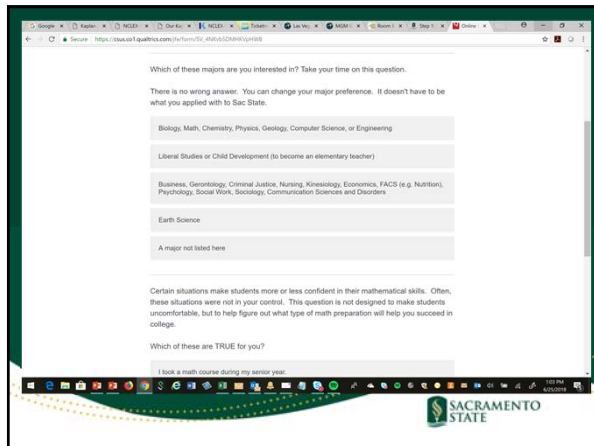
Earth Science

A major not listed here

Certain situations make students more or less confident in their mathematical skills. Often, these situations were not in your control. This question is not designed to make students uncomfortable, but to help figure out what type of math preparation will help you succeed in college.

Which of these are TRUE for you?

I took a math course during my senior year.



Which of these majors are you interested in? Take your time on this question.

There is no wrong answer. You can change your major preference. It doesn't have to be what you applied with to Sac State.

Biology, Math, Chemistry, Physics, Geology, Computer Science, or Engineering

Liberal Studies or Child Development (to become an elementary teacher)

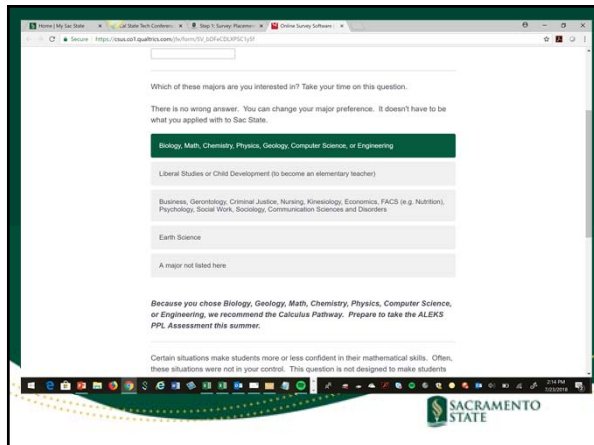
Business, Gerontology, Criminal Justice, Nursing, Kinesiology, Economics, FACS (e.g. Nutrition), Psychology, Social Work, Sociology, Communication Sciences and Disorders

Earth Science

A major not listed here

Because you chose Biology, Geology, Math, Chemistry, Physics, Computer Science, or Engineering, we recommend the Calculus Pathway. Prepare to take the ALEKS PPL Assessment this summer.

Certain situations make students more or less confident in their mathematical skills. Often, these situations were not in your control. This question is not designed to make students uncomfortable, but to help figure out what type of math preparation will help you succeed in college.



Which of these majors are you interested in? Take your time on this question.

There is no wrong answer. You can change your major preference. It doesn't have to be what you applied with to Sac State.

Biology, Math, Chemistry, Physics, Geology, Computer Science, or Engineering

Liberal Studies or Child Development (to become an elementary teacher)

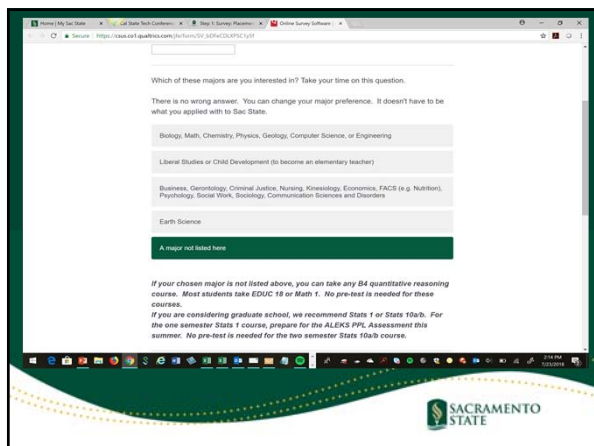
Business, Gerontology, Criminal Justice, Nursing, Kinesiology, Economics, FACS (e.g. Nutrition), Psychology, Social Work, Sociology, Communication Sciences and Disorders

Earth Science

A major not listed here

If your chosen major is not listed above, you can take any B4 quantitative reasoning course. Most students take EDUC 18 or Math 1. No pre-test is needed for these courses.

If you are considering graduate school, we recommend Stats 1 or Stats 10a/b. For the one semester Stats 1 course, prepare for the ALEKS PPL Assessment this summer. No pre-test is needed for the two semester Stats 10a/b course.



Home | My Sac State | Cal State Tech Conference | Step 1: Survey Planner | Online Survey Software

Secure | https://www.safqualtrics.com/Forms/07_3094C2L0P5C1Y5F

Certain situations make students more or less confident in their mathematical skills. Often, these situations were not in your control. This question is not designed to make students uncomfortable, but to help figure out what type of math preparation will help you succeed in college.

Which of these are TRUE for you?

☐ I took a math course during my senior year.

☐ Math is fun or interesting to me.

☐ If I have trouble in Math (or any course), I will ask for help on campus (e.g. tutoring, math lab, faculty office hours).

☐ I received a B or higher on all of my high school math courses.

☐ I will be participating in the EOP Summer Bridge Academy.

☐ I received a 3 or higher on my high school AP test.

☐ None (or just one) of these is true for me.

SACRAMENTO STATE

Home | My Sac State | Cal State Tech Conference | Step 1: Survey Planner | Online Survey Software

Secure | https://www.safqualtrics.com/Forms/07_3094C2L0P5C1Y5F

Which of these are TRUE for you?

☐ I took a math course during my senior year.

☐ Math is fun or interesting to me.

☐ If I have trouble in Math (or any course), I will ask for help on campus (e.g. tutoring, math lab, faculty office hours).

☐ I received a B or higher on all of my high school math courses.

☐ I will be participating in the EOP Summer Bridge Academy.

☐ I received a 3 or higher on my high school AP test.

☒ None (or just one) of these is true for me.

No problem. Math can be daunting for students. We understand. We also recommend you consider boosting your math skills by completing Knewton, or taking a math course over the summer. Look into your local community college, or for a BL course at Sac State.

SACRAMENTO STATE

Home | My Sac State | Cal State Tech Conference | Step 1: Survey Planner | Online Survey Software

Secure | https://www.safqualtrics.com/Forms/07_3094C2L0P5C1Y5F

Which of these are TRUE for you?

☐ I took a math course during my senior year.

☐ Math is fun or interesting to me.

☒ If I have trouble in Math (or any course), I will ask for help on campus (e.g. tutoring, math lab, faculty office hours).

☐ I received a B or higher on all of my high school math courses.

☐ I will be participating in the EOP Summer Bridge Academy.

☐ I received a 3 or higher on my high school AP test.

☐ None (or just one) of these is true for me.

The transition to college can be tough. Being able to ask for help to understand concepts can help college students succeed.

SACRAMENTO STATE

Questionnaire

- Results of questionnaire are emailed to students for Orientation.

Step 2: Course Descriptions

Which course is right for me?

The best math course for you depends largely on your major, and future interests, like grad school or possibly changing your major. **Be sure to consult with your major advisor to determine the math/draft course(s) required for your major.** More in-depth descriptions are available online in the State Catalog.

(KEY: **A** = requires a minimum ALEKS PPL math placement score, **B** = does NOT require an ALEKS PPL score)

EDUC 18 - Mathematical Practices Across Cultures (B)

Introduction to diverse mathematical thought, action and practices across cultures. Mathematics will be seen from a diversity of contexts. You will consider how diverse contexts and traditions both reflect a culture's heritage and world view and influence the mathematics learned and used.

MATH 1 - Mathematical Reasoning (B)

This course is designed specifically for students enjoying the arts and humanities. It deals with applications of mathematics in areas such as politics, art, music, and languages. (Does your math class can be used to explain why people prefer white screens?)

MATH 10 - Essentials of Algebra (B)

During the first semester of class of history for this student, allowing you to view the course as a third new student.

Get Student View | Leave Student View

SACRAMENTO STATE

Home

Announcements

Smartlinking

Online Tutoring


Dashboard

Calendar

9:00 AM

Step 3: Early Start (Knewton)

Step 3: Early Start (Knewton)



Before your new student orientation session, you **must** complete all the Early Start (Knewton) assignments before summer orientation. If you don't complete all assignments, Knewton will not allow you to enter the course.

If you have a proctored ALEKS PPL score of 41 or higher, completion of Early Start is no longer required.

There is a small fee (less than \$20) to complete Knewton.

Knewton is a self-guided program, but we can help. Stop by the Math Lab in Brighton Hall 138 this summer mathlab@csuohio.edu/mathlab/tutorlab.html. We are available in-person, or online. Check the website for details.

- [Reviewing Knewton for Early Start](#)
- [Optional - Knewton for Precalculus and Calculus for Life/Physical Science](#)
- [Optional - Knewton for Calculus courses](#)

Did you like learning math with Knewton? If your major requires higher-level math, consider doing more. It's not required by SAC State, but we put the option up for if you're like a little more math prep.

• [Optional - Knewton for Precalculus and Calculus for Life/Physical Science](#)

• [Optional - Knewton for Calculus courses](#)

Previous

Next


You are currently logged in Student View


Receiving the test student will stop all history for this student, allowing you


Reset Student

Lesson Student View

SACRAMENTO STATE


 Questionnaire


 Early Start


 ALEKS PPL


Early Start (Optional)

- Partnered with Knewton
- Worked with faculty to develop the curriculum
- Each "class" is \$17
- Average completion time: 8 – 12 hours




 Questionnaire

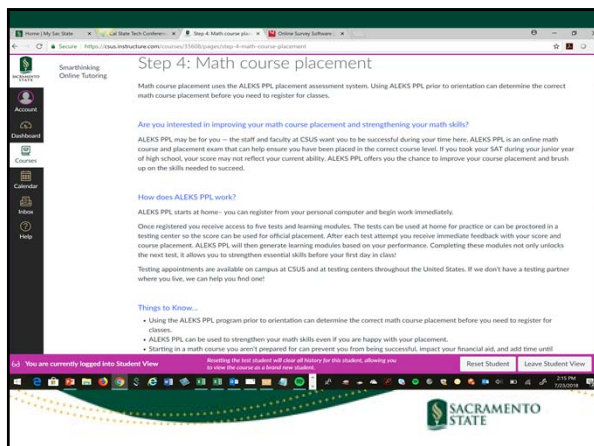
 Early Start

 ALEKS PPL

Early Start (Optional)

- Content for ALL students
 - Math 12, 17, 24 (College Algebra)
 - Math 26A, 29 (Precalculus)
 - Math 30 (Calculus)
- Math support with grad students
 - In-person in Math Lab
 - Online tutoring
 - Streamlabs OBS & YouTube Live
 - AWWapp.com + tablet





Internet Explorer (32-bit) | Home | File | Edit | View | Tools | Favorites | Window | Help | Address bar: https://www.sacramento.edu/students/000000/pages/step-4-mail-check-outlook-calendar

Microsoft Edge | Account | Dashboard | Courses | Calendar | Mail | Help

an additional fee for using ProctorU) **The final day of testing by the Math Department is August 24, 2018.**

You will also have the opportunity to take an ALEKS PPL assessment at the end of the second day of your orientation session. Immediately after Horner Wrap Up, there will be a mentor from FYE available to walk to you to the ALEKS PPL ASSESSMENT.

You can meet us after your orientation or any of the days listed below.

Orientation ALEKS PPL Assessment Days

Meet us after Horner Wrap Up to walk to the 1:30 pm ALEKS PPL.

Second day of orientation:

- Session A: June 27
- Session B: June 29
- Session C: July 3
- Session D: July 6
- Session E: July 10
- Session F: July 12
- Session H: July 18
- Session I: July 20
- Session J: July 24
- Session K: July 26
- Session L: July 31

Other exam dates will be posted throughout the semester at the [ALEKS Information](#) e website. Taking the exam earlier is highly recommended.

Previous Next

6) You are currently logged into Student View. **Reboot the test student will clear all history for this student, allowing you to retest the course and level placement.** [Reset Student](#) [Leave Student View](#)

SACRAMENTO STATE

Step 5: For being college ready

College is a time of transition. No matter how excited or prepared students are, it can be tough. New campus, new friends, and a new way of learning. Our best advice? Don't be afraid or intimidated to get help. It's just not possible to know "it all." That's the new adventure of college.

So: State has resources to help throughout the college years. Here's just a few:

- **First Year Experience** - (www.csude.edu/fye/) - This program is for all first time college students. FYE provides courses specifically designed for you - the first year student. At orientation, you will have an opportunity to enroll into First Year Seminar. This General Education (GE) course explores college transition and personal development. FYE also provides the FYE Space in Library 352D where you can study, get mentoring, or just chill out.
- **The Math Lab** - (<http://www.csude.edu/math/students/mathlab.html>) - Visiting the Math Lab is a must for all first time college students. This year, you will be taking some type of math course. Get help early, and often. Doing help early, and often, will help math students up for success.
- **Peer Assisted Learning** - (<http://www.csude.edu/peer/psal/>) - Are you in a science or engineering type major? Consider signing up for a PAL, since studies in orientation. Paired with higher level math courses, PALs are one unit sessions which can improve your understanding of tough math concepts. Learn more at orientation.
- **The PARC** - (<http://www.csude.edu/parc/>) - Stop by the PARC for tutoring, or to sign up for supplemental instruction for a variety of

CSDE: You are currently logged into Student View

Return Student | Leave Student View

Questionnaire

Early Start

ALEKS PPL

- Students have completed PLUM if...
 - Questionnaire is completed
 - All pages are visited
 - Early Start is completed (Category IV only)
- Students get different messaging based on their category.

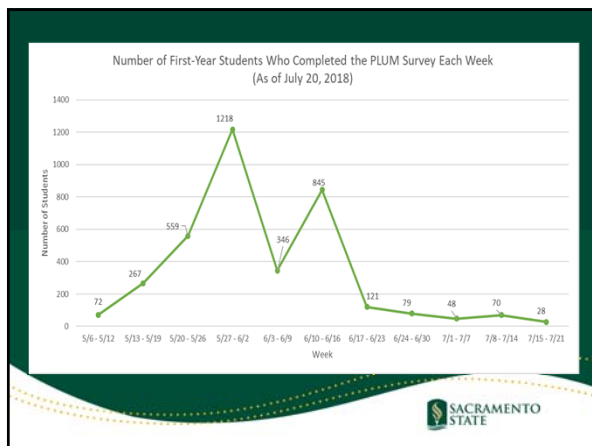
Results

As of July 23, 2018

- 3759 students completed PLUM
- 96% of incoming class

Cumulative Number and Percentage of Students Who Completed the PLUM Survey By Week (As of July 20, 2018)


Week	Cumulative Number of Students	Percentage of Students who Completed the Survey out of 3900 First Year Students
5/11-5/12	72	1.8%
5/13-5/19	267	6.9%
5/20-5/26	559	14.3%
5/27-6/2	1218	31.2%
6/3-6/9	346	8.9%
6/10-6/16	845	21.7%
6/17-6/23	121	3.1%
6/24-6/30	79	2.0%
7/1-7/7	48	1.2%
7/8-7/14	70	1.8%
7/15-7/21	28	0.7%



Collaboration = Key

Departments involved:

- Mathematics
- First Year Experience
- IRT
- Outreach & Admissions
- First Year Orientation Team
- Center for College Readiness
- English – Writing Program
- Dean of Undergraduate Studies



Thank you

David Zeigler, PhD Zeigler@csus.edu
Bridget Parsh, RN, EdD parshb@csus.edu
Vanessa Newsome-Slade vnewsome@calpoly.edu
Chevelle Newsome, PhD cnewsome@csus.edu