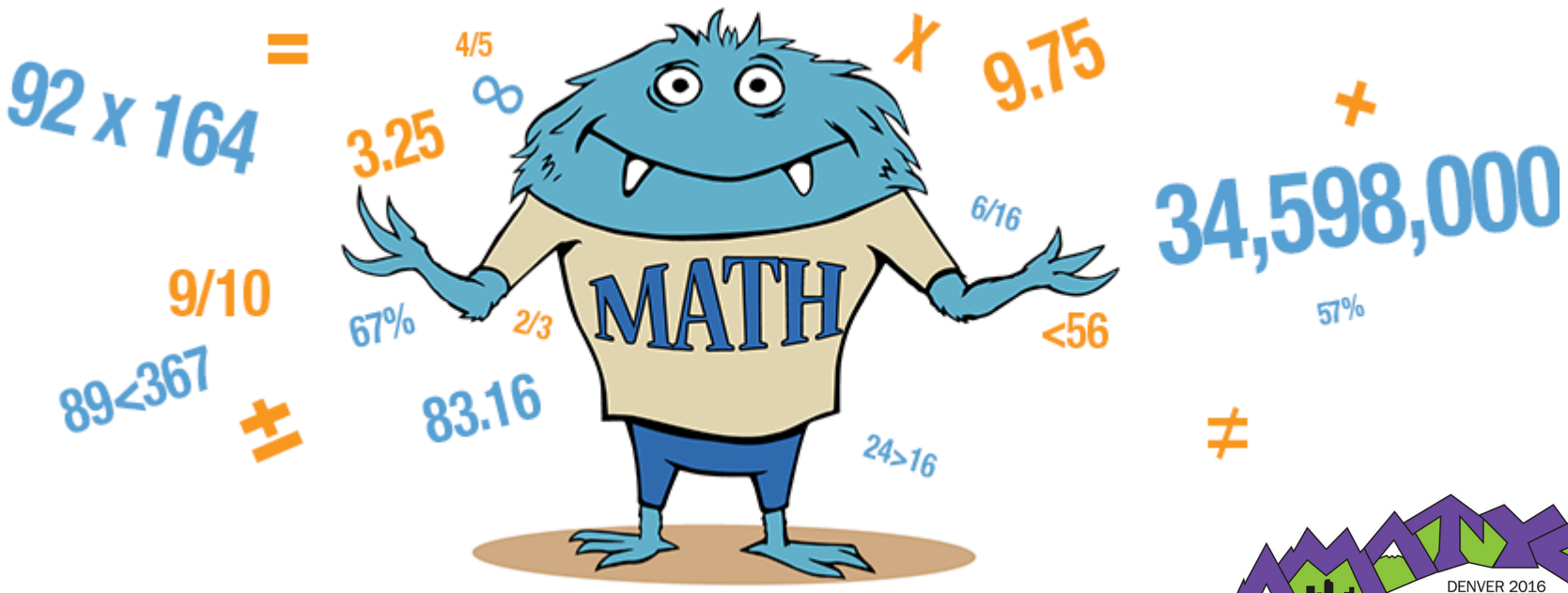
It's Not Class, It's Not Tutoring, It's…

Power Math Camp!



DENVER 2016
Math at a Mile High

2016 AMATYC Conference

It's Not Class, It's Not Tutoring, It's…

Power Math Camp!

Presented by

Rachel DeAlejandro & Shannon Ruth

MARICOPA COMMUNITY COLLEGES

GateWay Community College

GateWay Community College

- **One of the 10 Maricopa Community Colleges**
- **Located in Phoenix, AZ**

GateWay Community College

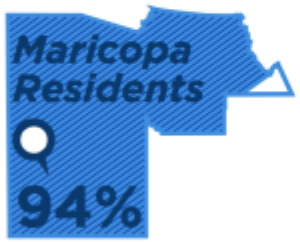
GateWay Community College

student population*

52% *female*

46% *male*

2% *unreported*



AGE

Average **29**

62% *-under-* **age: 30**

53% *in day time classes*

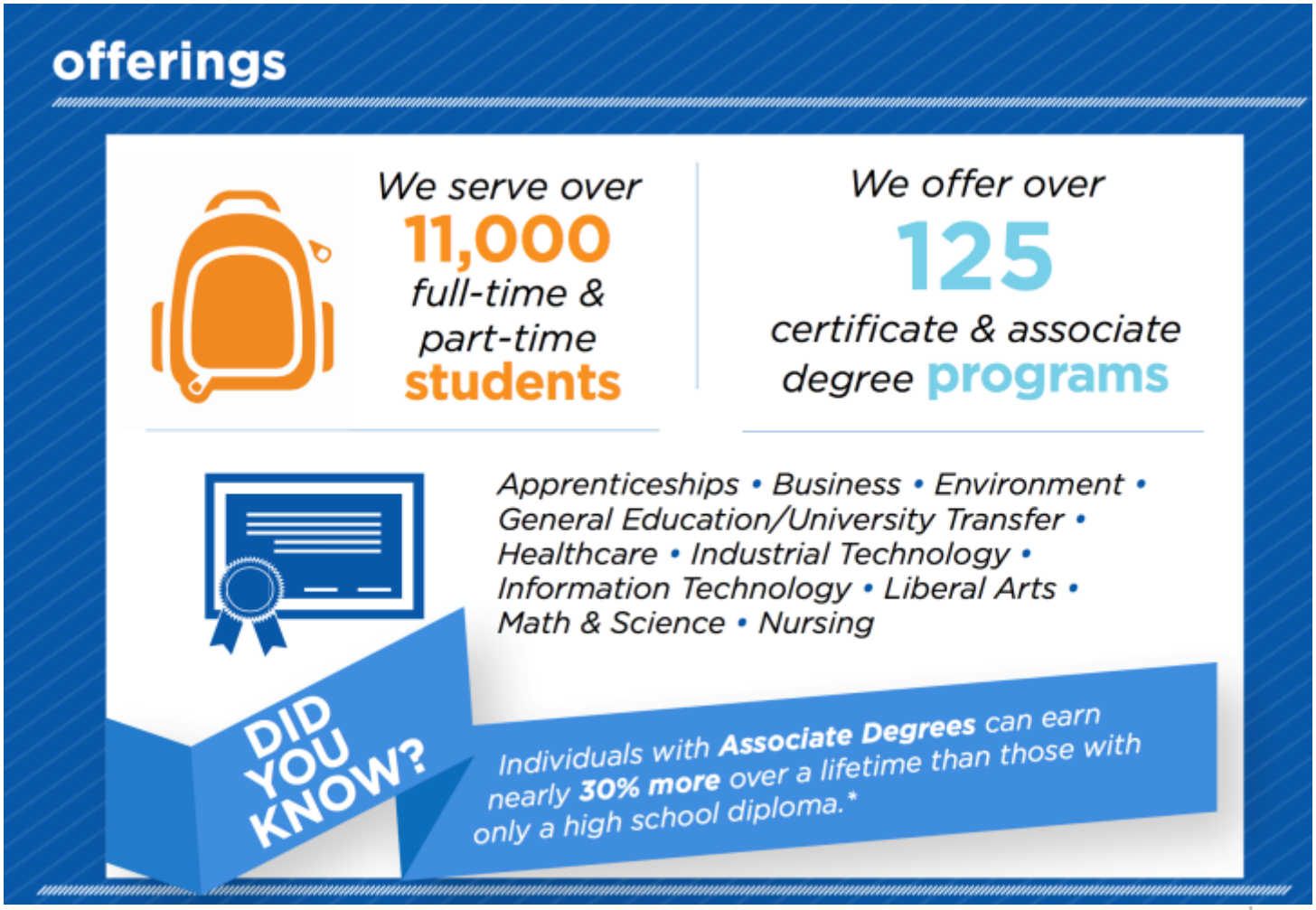
77% *in part-time classes*

54% *in occupational programs*

37% *Caucasian*
35% *Hispanic*
12% *African American*
7% *Other*
5% *Native American*
4% *Asian*

*Based on Fall 2014 enrollment. Numbers subject to change.

GateWay Community College



Why the need for Power Math Camp?

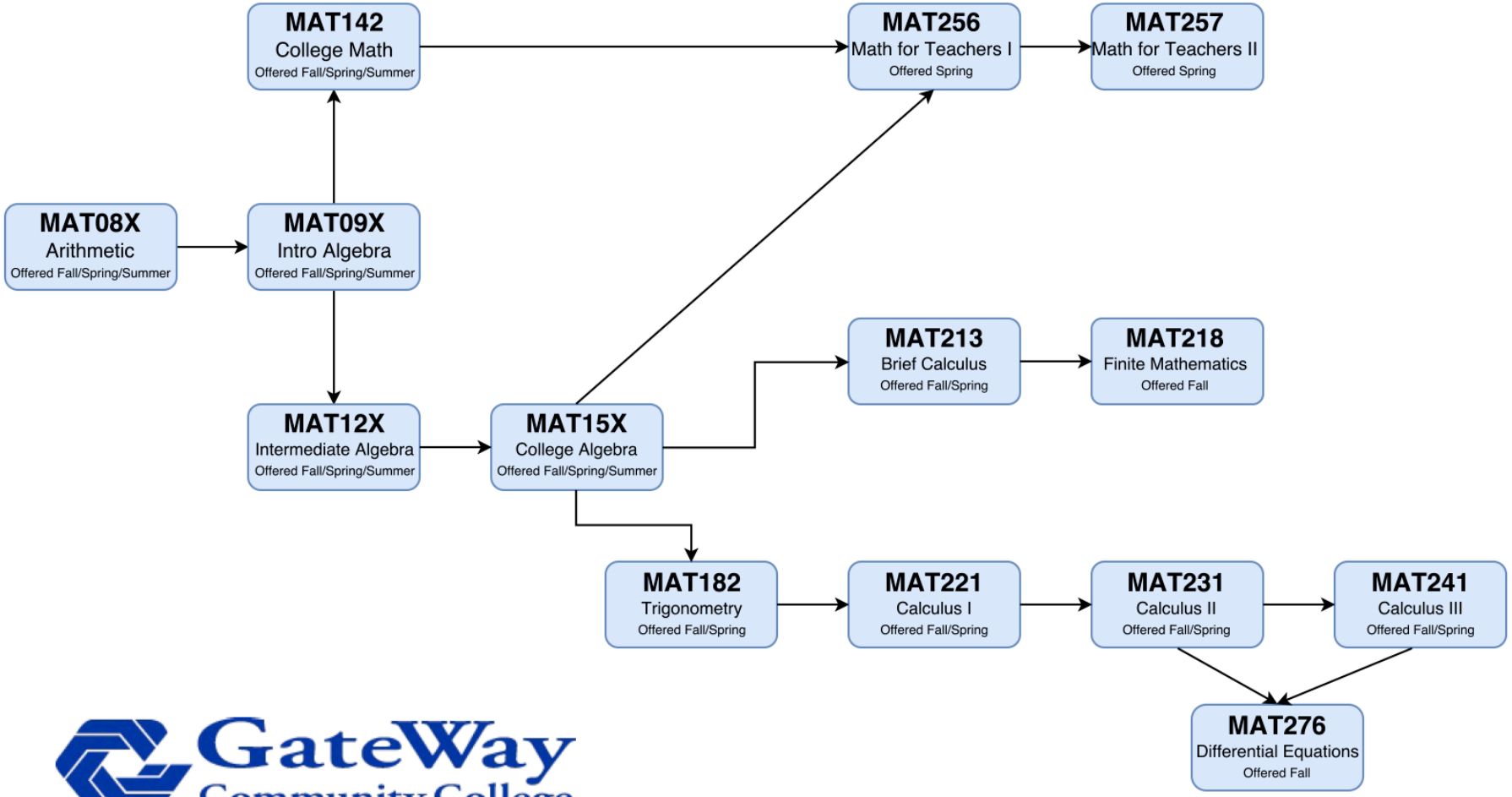
- National educational research indicates higher attrition rates for students who spend more time in remedial coursework

  (Boylan, 2008)

- Only 54.5% of students in developmental math classes are successful

  (GWCC IR Data)

Why the need for Power Math Camp?



GateWay Community College

What is Power Math Camp?

- A free intensive math workshop to:
  - Help refresh and solidify math skills
  - Prepare for high-stakes placement test
  - Reduce math anxiety

A chance to be in the students' shoes….

What if your college math experience was dependent upon your answers to the following three questions?

A chance to be in the students' shoes….

Problem #1 – Arithmetic

Erica bought $3\frac{1}{2}$ yards of fabric. If she uses $\frac{2}{3}$ of the fabric to make a curtain, how much will she have left?

A. $\frac{1}{6}$ yd.

B. $\frac{1}{3}$ yd.

C. $1\frac{1}{6}$ yd.

D. $2\frac{1}{3}$ yd.

A chance to be in the students' shoes….

Problem #2 – Elementary Algebra

In the figure below, both circles have the same center, and the radius of the larger circle is R. If the radius of the smaller circle is 3 units less than R, which of the following represents the area of the shaded region?

A. πR^2
B. $\pi(R-3)^2$
C. $\pi R^2 - \pi \times 3^2$
D. $\pi R^2 - \pi(R-3)^2$

A chance to be in the students' shoes….

Problem #3 – Elementary Algebra

On Monday, it took Helen 3 hours to do a page of science homework exercises. The next day she did the same number of exercises in 2 hours. If her average rate on Monday was p exercises per hour, what was her average rate the next day, in terms of p?

A. $2(p + 1)$ exercises per hour

B. $3(p - 1)$ exercises per hour

C. $\frac{2}{3}p$ exercises per hour

D. $\frac{3}{2}p$ exercises per hour

Okay, so now for some details…

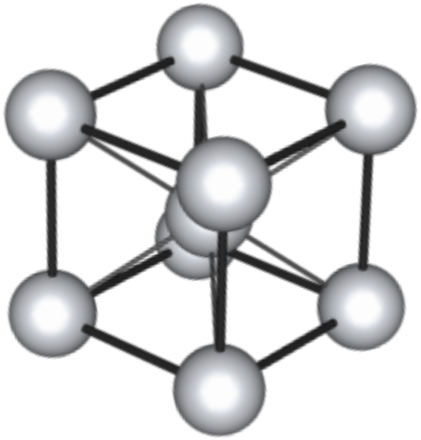
- **Power Math Camp is now offered in 3 formats**
  - In person to any student in a one week format **(PMC)**
  - In person to a specific student population in a three week format **(LIFT PMC)**
  - Online to ANY student **(Online PMC)**

Who can participate in PMC?

- **ANY STUDENT!**
  - Currently enrolled in math class
  - Improve placement scores
  - Nursing students
  - Reduce math anxiety
  - Review

Power Math Camp Structure

- Offered before each semester
  - 4 days; 3 sessions each day
- New material is covered each day
- Each session is two hours long
  - ~45 minute interactive "lecture"
- We encourage student to use the remaining time to work on practice problems
  - Tutors available



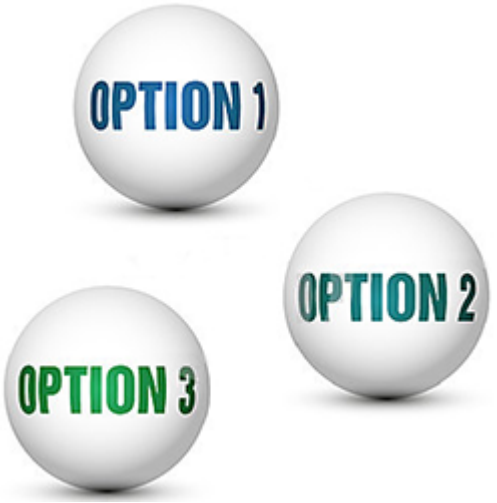
POWER MATH CAMP

LEARNING CENTER // IE2108

Campus Advertising

Power Math Camp: 3 sessions

- **PMC Basics**
  - Covers material from Arithmetic
  - Ideal for student entering Intro Algebra
- **PMC I**
  - Covers material from Intro Algebra
  - Ideal for students entering Intermediate Algebra
- **PMC II**
  - Covers material from Intermediate Algebra
  - Ideal for student entering College Algebra



How do I sign up?

- PMC is offered through the Learning Center
- Students can sign up…
  - In person
  - By phone
  - On Learning Center website

What the data says

The table shows the percent of participants who completed* a math class and were successful.

Date of Camp	Success in Math Class
May 2013	100%
August 2013	87.5%
January 2014	100%
May 2014	90%
August 2014	81%
January 2015	85%
May 2015	100%
August 2015	100%
January 2016	80%

*Withdrawn students have been removed

Now for the **LIFT** Power Math Camp!

- A variation on the traditional Power Math Camp
  - Different student population
  - Different time of offering
  - Different length
  - Slightly different goal

What is the LIFT Program?

LIFT is both a summer bridge and long-term mentorship program designed to provide underrepresented and at-risk students with long-term educational support.

Who Can Participate in LIFT PMC?

- LIFT Students!

Students transitioning from high school to college

Phoenix Union High School District

- One of the largest high school districts in the country, with 16 schools and over 27,000 students
- Covers 220-square miles of Arizona's capital city
- 94% of students are minority, including 80% Latino

http://www.phxhs.k12.az.us/site/default.aspx?PageID=1

LIFT PMC Structure

- Students are officially registered for the Camp as a non-credit course
- Offered only during the month of July
- Camp meets for 12 days over the course of 3 weeks
- A free opportunity, a comfortable environment, a campus connection

LIFT PMC Content

- Specially-designed curriculum, strategically aimed at refreshing content that is relevant to math classes at the community college level

LIFT PMC Content

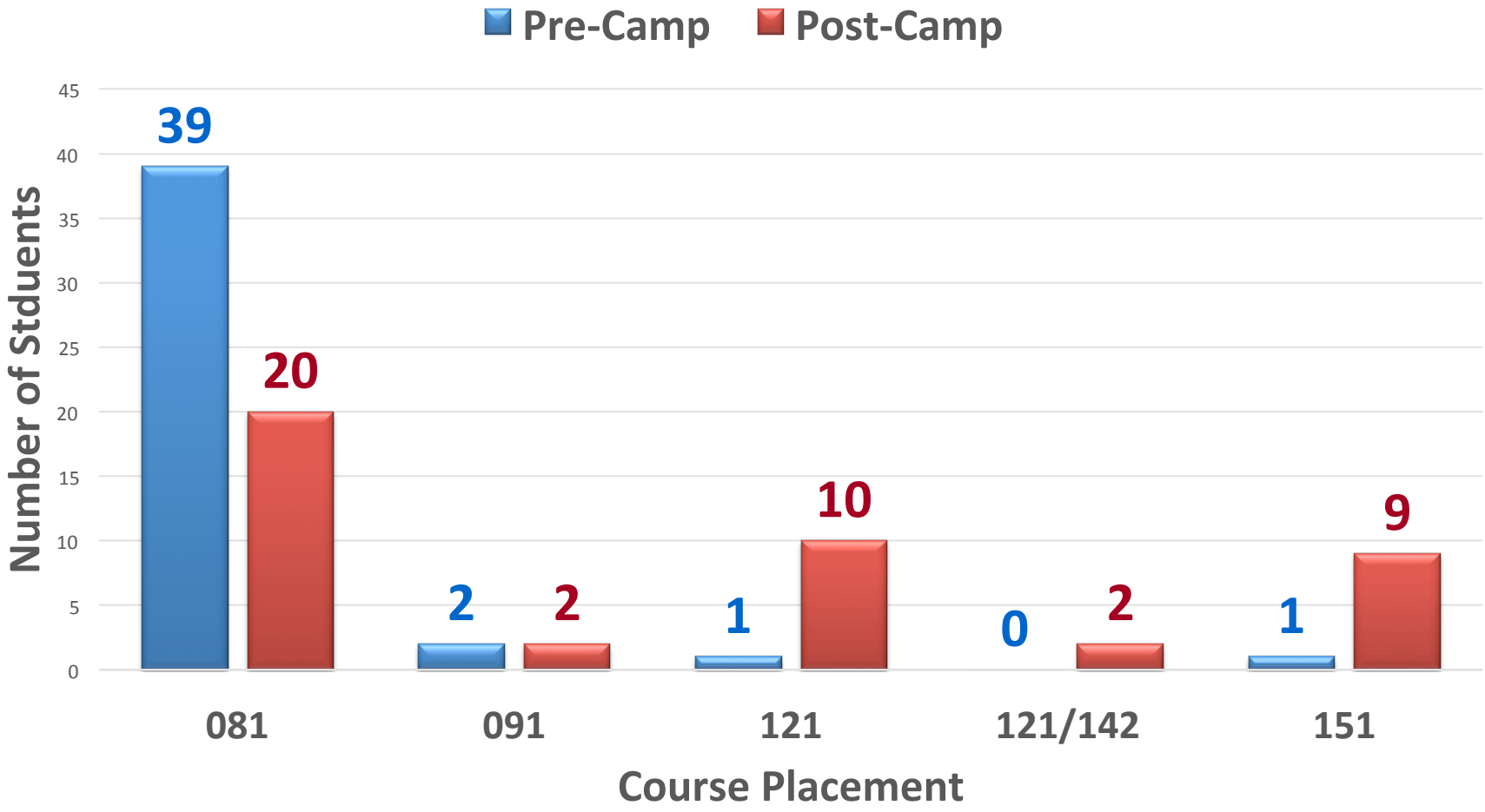
- A careful blend of direct instruction with activities involving and engaging students
  - Canvas course (LMS)
  - Game Show Review Day using clickers
  - iPad Day where students created their own video tutorials!

LIFT PMC Content

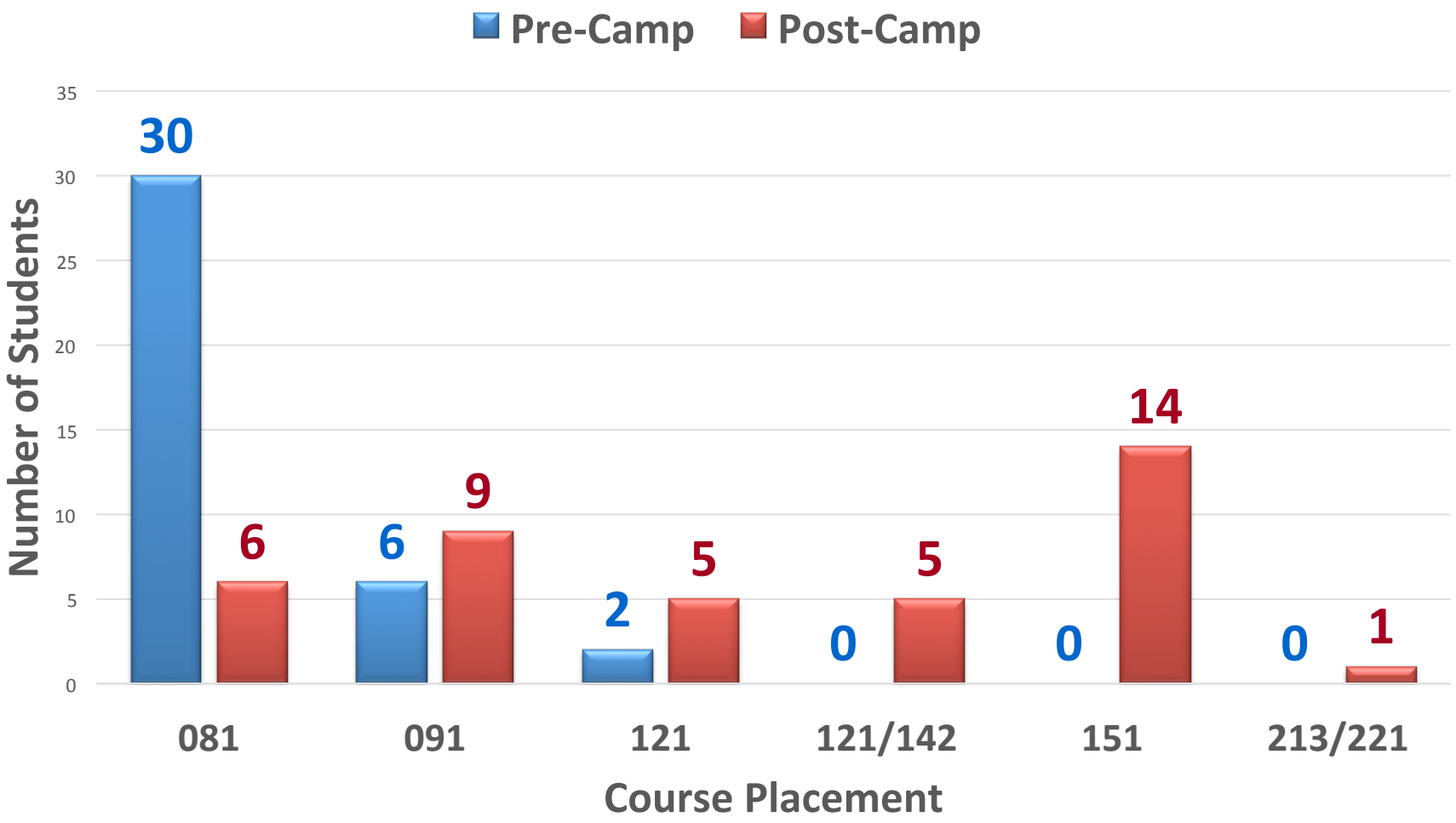
LIFT PMC Structure

LIFT PMC Structure

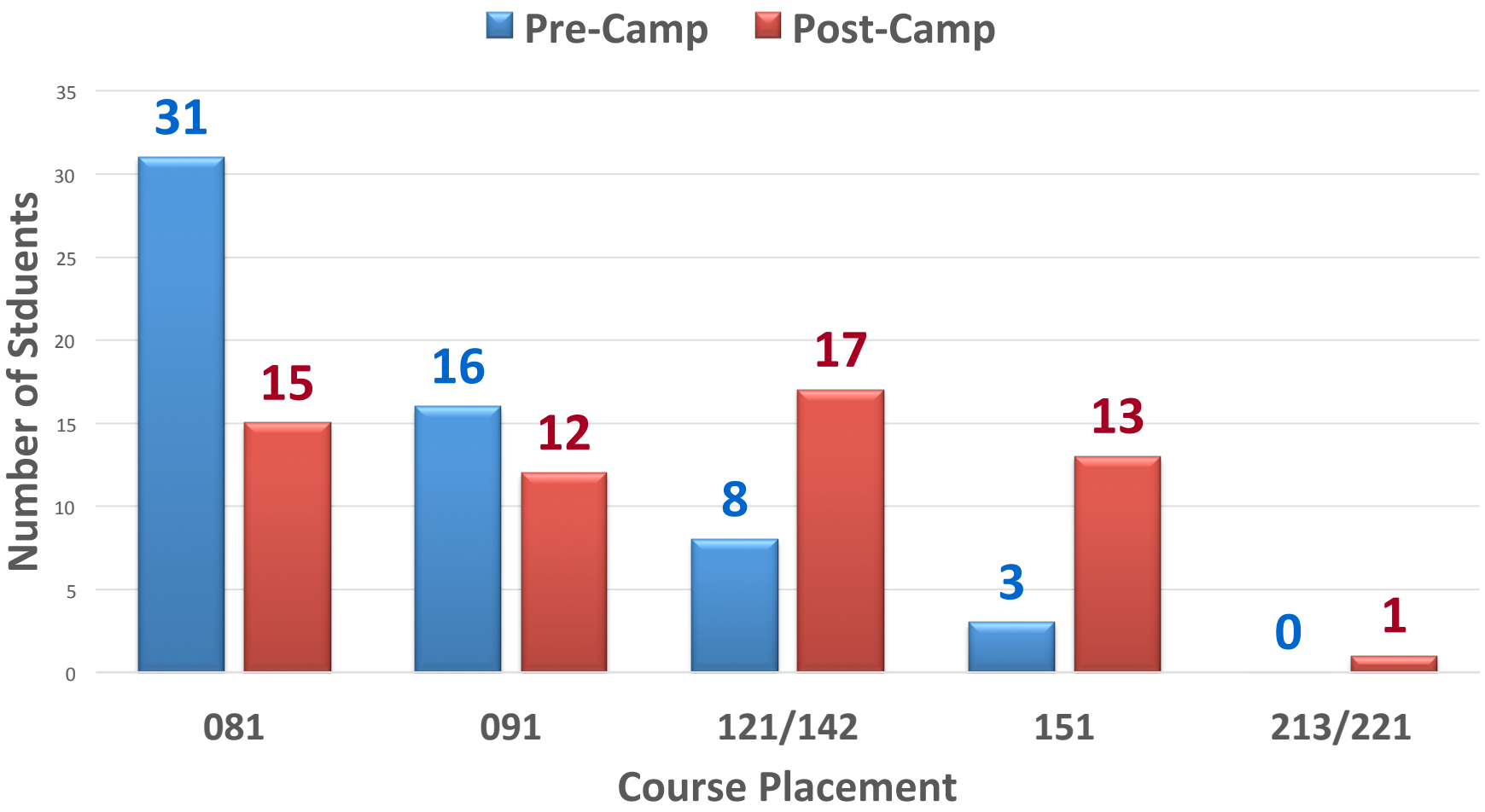
LIFT PMC 2013: What the data says



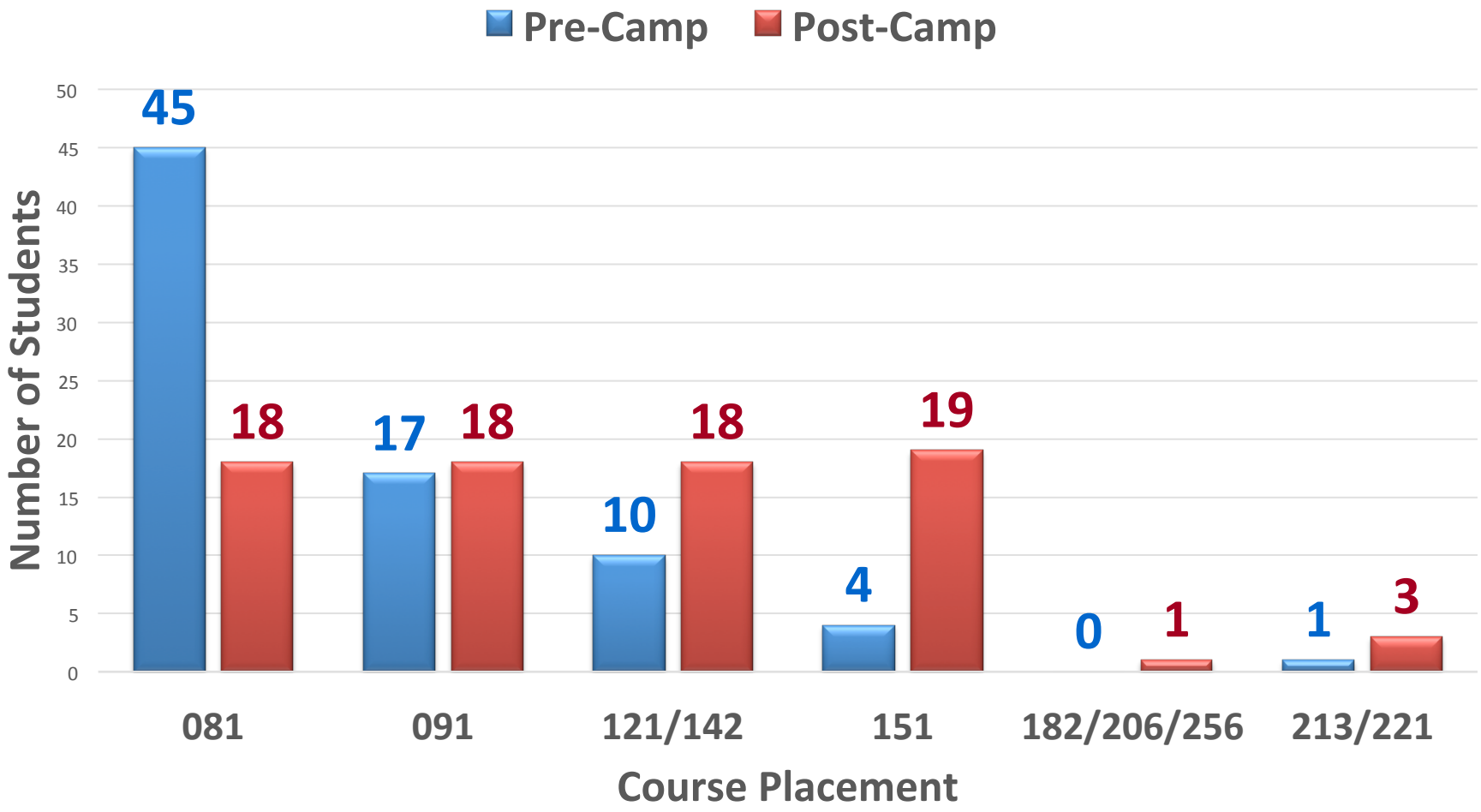
LIFT PMC 2014: What the data says



LIFT PMC 2015: What the data says



LIFT PMC 2016: What the data says



LIFT PMC: What the Data Says

- July 2013 Camp Students

Fall 2013 % Enrolled in a Math Course	**91%**
Fall 2013 Cohort % Completion	**82%**
Fall 2013 Cohort % Success	**79%**
Spring 2014 Cohort % Completion	**88%**
Spring 2014 Cohort % Success	**84%**

LIFT PMC Results (4 summer cohorts)

218 students

collectively skipped **233** math classes

saving close to ***$80,000*** in tuition alone!

In the words of the students

LIFT PMC: Qualitative Results

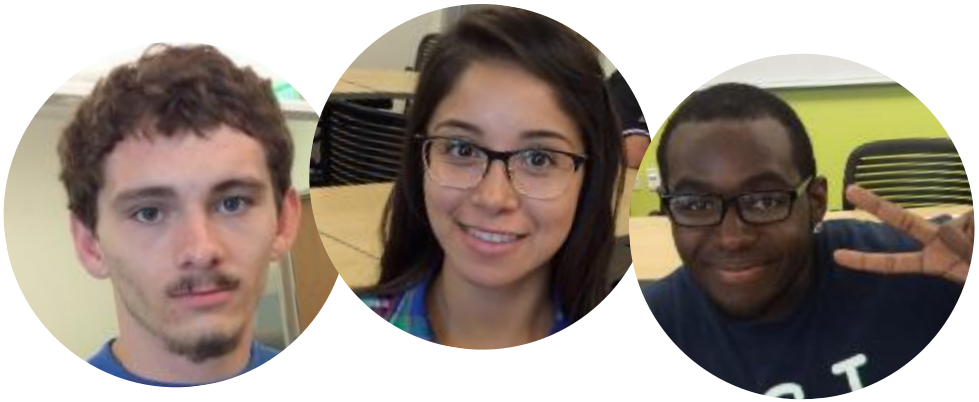
In the words of the students:

- "Amazing! I learned and went over a lot of things I never understood! Thank you all for this experience!"
- "I enjoy going to Math Camp, it was better than what I expected"
- Favorite: "how much we got to practice"
- "It was great, very comfortable with the learning environment and the people"

LIFT PMC: Qualitative Results

In the words of the students:

- "It was done very well, I never felt rushed"
- "Will this be available every summer?"
- "It was awesome! I had a lot of fun, learned some new things and met some new people"



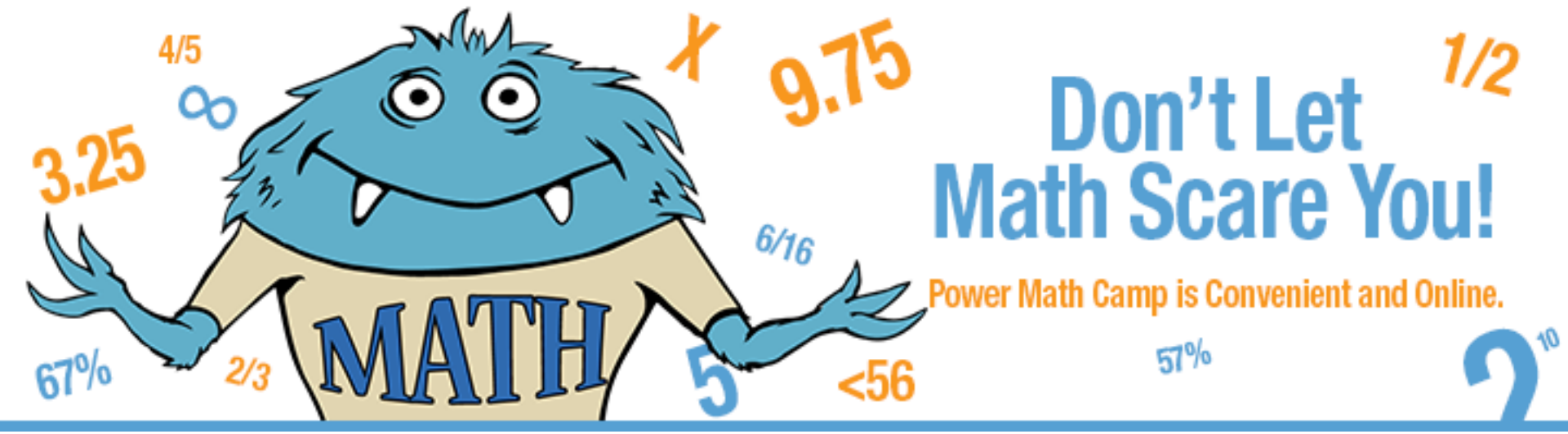
And last but not least…

Power Math Camp *Online* ***starting 2015***

Power Math Camp *Online*

- Many students were unable to attend Power Math Camp in person
- We sought grant funding to put resources online in a fun, easy way for students
- To date, we have over 1,274 students enrolled in the online course
- Canvas course has video tutorials and quizzes for immediate feedback
- Average score in course is 82%

Power Math Camp *Online*



Power Math Camp *Online* - Feedback

- Rate your experience on a scale of 1 to 10, where 1 is "not a great experience" and 10 is "great experience".
  - Average response is 9.4 out of 10.

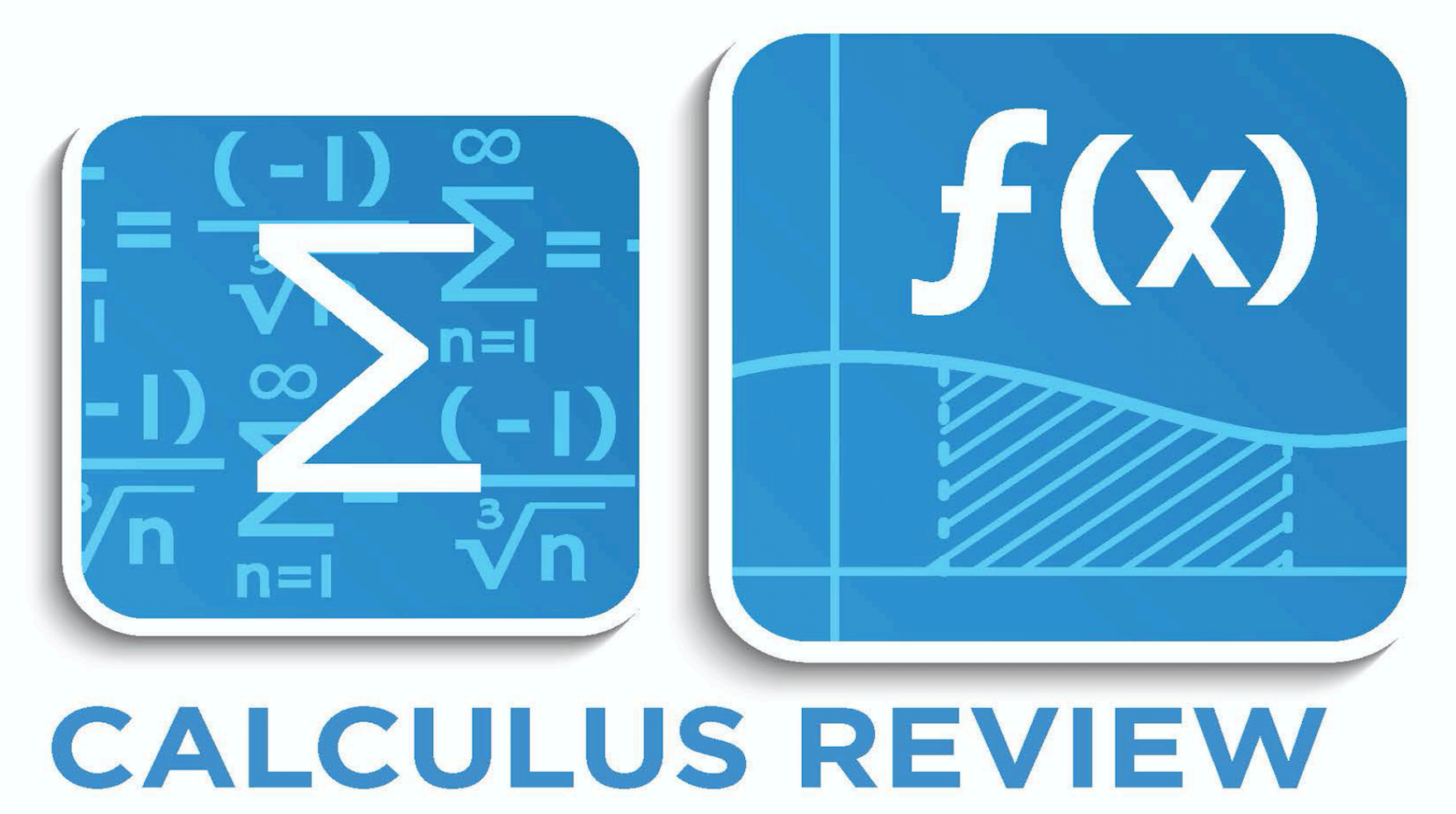
- "The Power Math Camp is INCREDIBLY helpful. I would DEFINITELY advise the nursing students (or any students) that struggle with Math to enroll in the Math Camp. It's very basic and goes over the essentials before you move on to the heavies - sort of like a refresher but without any lecture. 5/5 - would recommend."

Power Math Camp *Online* - Feedback

What is your favorite part?

- Video tutorials and quizzes
- Great organization of math skills
- The convenience factor is great
- The passion for people helping people
- Its accessibility
- The instruction is very close to being on a one on one basis, and they are very well versed in Math subjects

Power Math Camp *Extensions*



It starts with one…

- PMC: In the Voice of the Students

Looking Towards the Future

- Recommendations
  - Use effective marketing strategies – get the word out!
  - Track students after they participate all forms of PMC to see how it contributes to students' long-term success
  - Get buy-in from math faculty and administration
  - Secure funding
  - Reserve class seats for students who test higher
  - Continue extending content to include higher-level courses

Thank You for Coming!

Any Questions?

For More Info

- **Rachel DeAlejandro**, Learning Associate

rachel.dealejandro@gatewaycc.edu (602) 286 – 8473

- **Shannon Ruth**, Math Faculty

shannon.ruth@gatewaycc.edu (602) 286 – 8703

- **gatewaycc.edu/powermathcamp**

powermathcamp@gatewaycc.edu