Instruction in Action: Math

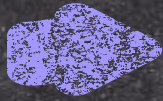April 25, 2022 MVLA Board Presentation

Laraine Ignacio
LAHS Department Coordinator

Annie Liu
MVHS Department Coordinator

Marcey Winawer
IST

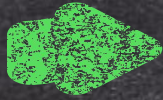Our <u>objective</u> is to give a brief overview of what is happening in math at MVLA
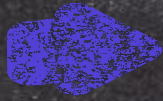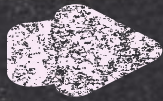
Agenda:

- Data Talks

- Typical Math Pathways

- How LAHS and MVHS Math are Unique

- What We are Excited About

- Challenges

- Data Points:
  - How We Measure Effectiveness
  - Number of Students Taking Math Classes
  - Students with Private Math Tutors

- Professional Learning

Data Talk

2. Rihanna
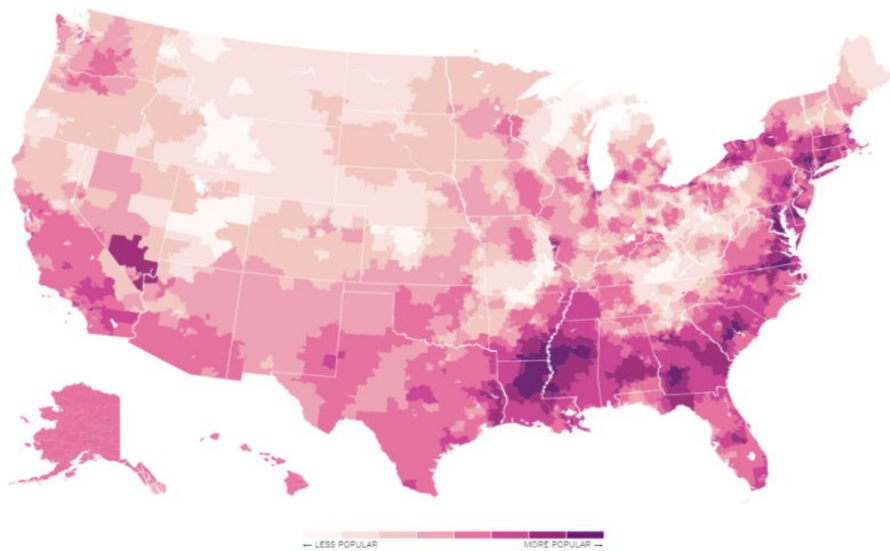
13. Drake

18. Taylor Swift

42. Luke Bryan

← LESS POPULAR   MORE POPULAR →
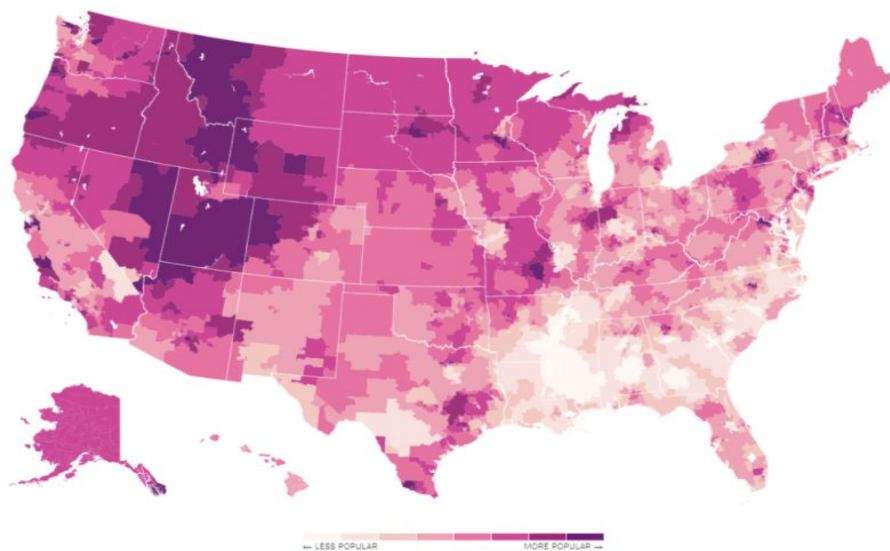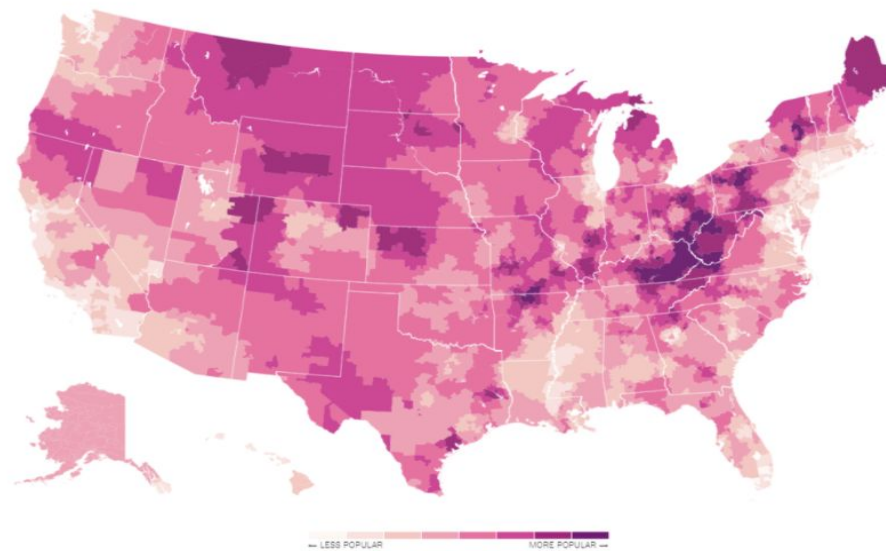
Data Talk

Military spending by country

Proposed increase
+$54 billion

United States
$596 billion

Britain
55

France
51

Russia
66

China
215

Japan
41

Saudi Arabia
87

India
51

United States — $596 billion
Next 7 countries — 567
Rest of the world — 514

$1,000,000,000,000

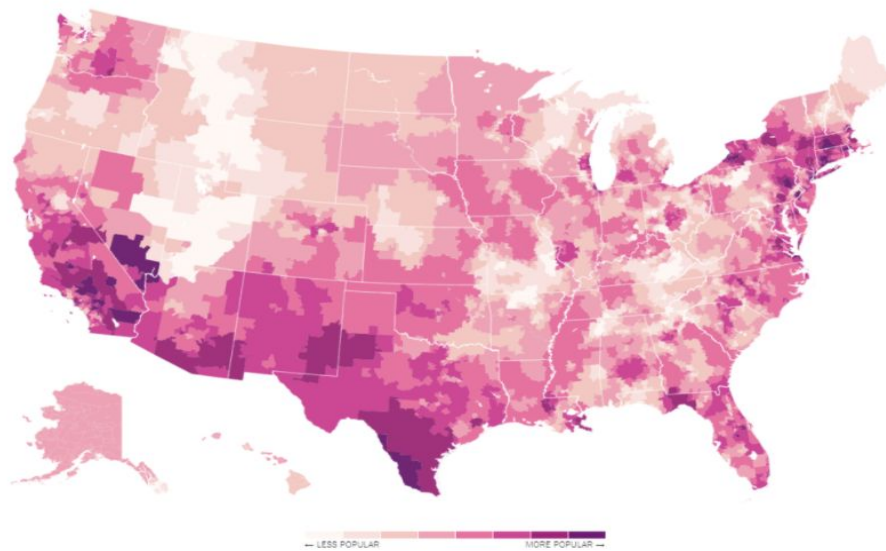| Company	Value
News Corp.	
Xerox	
Foot Locker	
Western Union	
Ralph Lauren	
H&R Block	
Under Armour	
Quest Diagnostics	
Hershey	$20 billion
Kroger	$24 billion
Ford	$40 billion
E*Trade	$16 billion
Goodyear	
Whirlpool	
Hilton Worldwide	$23 bil.
Gap	
Hasbro	
Dr Pepper Snapple	
Boeing	$201 billion
Bank of America	$312 billion
Walt Disney	$168 billion
Tiffany & Co.	
Harley-Davidson	
Volkswagen	$83 billion
21st Century Fox	$83 billion
eBay	$33 billion
General Mills	$27 billion

Squares for these 27 companies are sized according to each company's stock market value on August 2.
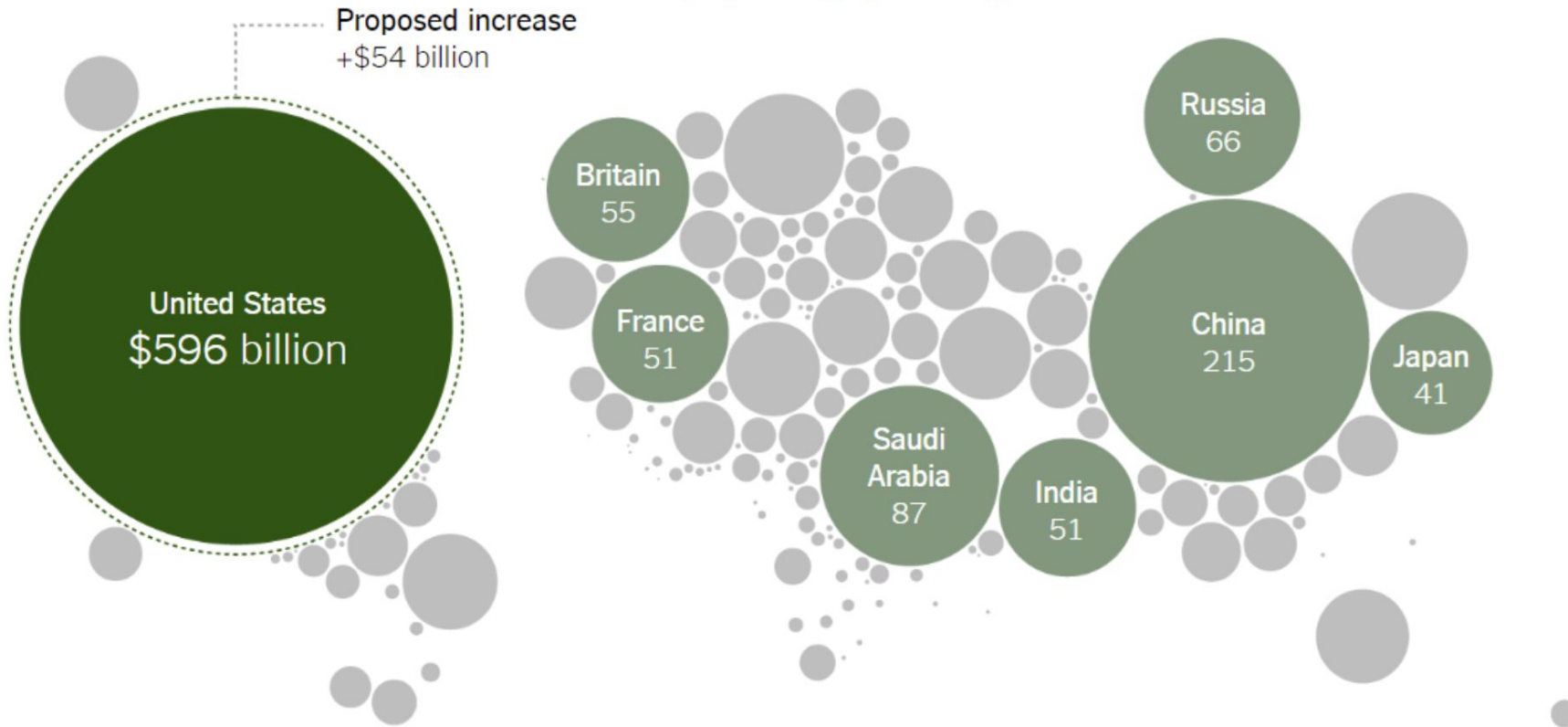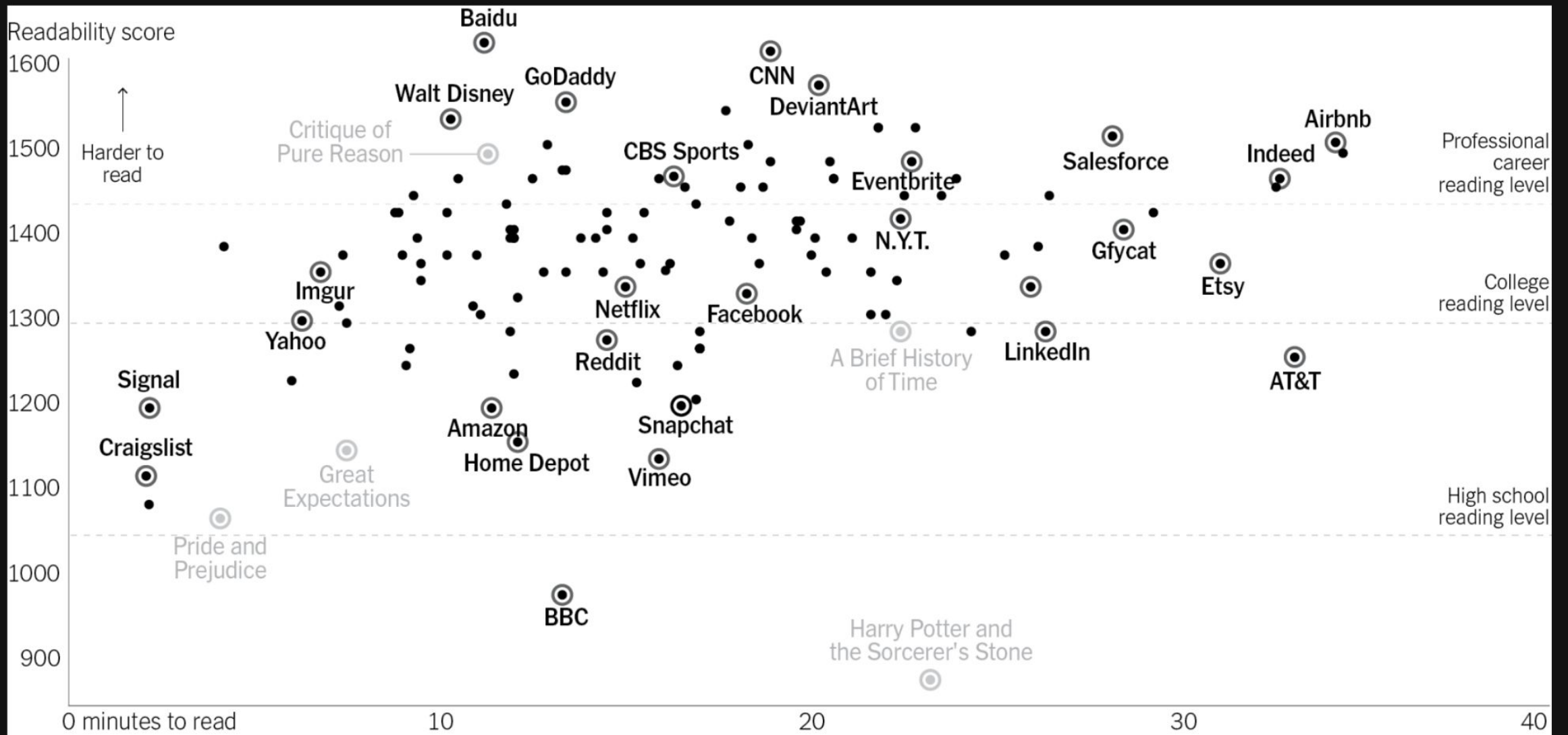
On August 2, Apple's stock market value topped a trillion dollars, a first for a U.S. corporation. In early September, Amazon crossed the trillion dollar threshold as well.

Data Talk

Readability score

↑ Harder to read

Baidu
GoDaddy
Walt Disney
Critique of Pure Reason
CBS Sports
CNN
DeviantArt
Eventbrite
Salesforce
Airbnb
Indeed
Professional career reading level
N.Y.T.
Gfycat
Imgur
Etsy
College reading level
Netflix
Facebook
Yahoo
Reddit
A Brief History of Time
LinkedIn
Signal
AT&T
Craigslist
Amazon
Snapchat
Great Expectations
Home Depot
Vimeo
High school reading level
Pride and Prejudice
BBC
Harry Potter and the Sorcerer's Stone

1600
1500
1400
1300
1200
1100
1000
900

0 minutes to read   10   20   30   40

Typical Math Pathways

Algebra I

Algebra I (9th Grade) branches to:
- Geometry H → Algebra II H → Trig/Math Ana H, Statistics
- Geometry CP → Algebra II CP → Statistics, Trig/Math Ana CP

| 9th Grade | 10th Grade | 11th Grade | 12th Grade |

Typical Math Pathways

Geometry

9th Grade	10th Grade	11th Grade	12th Grade
Geometry CP	Algebra II CP	Trig/Math Ana CP	Calculus
			AP Calculus AB
			Statistics
			AP Statistics

Typical Math Pathways

Alternative

Geometry
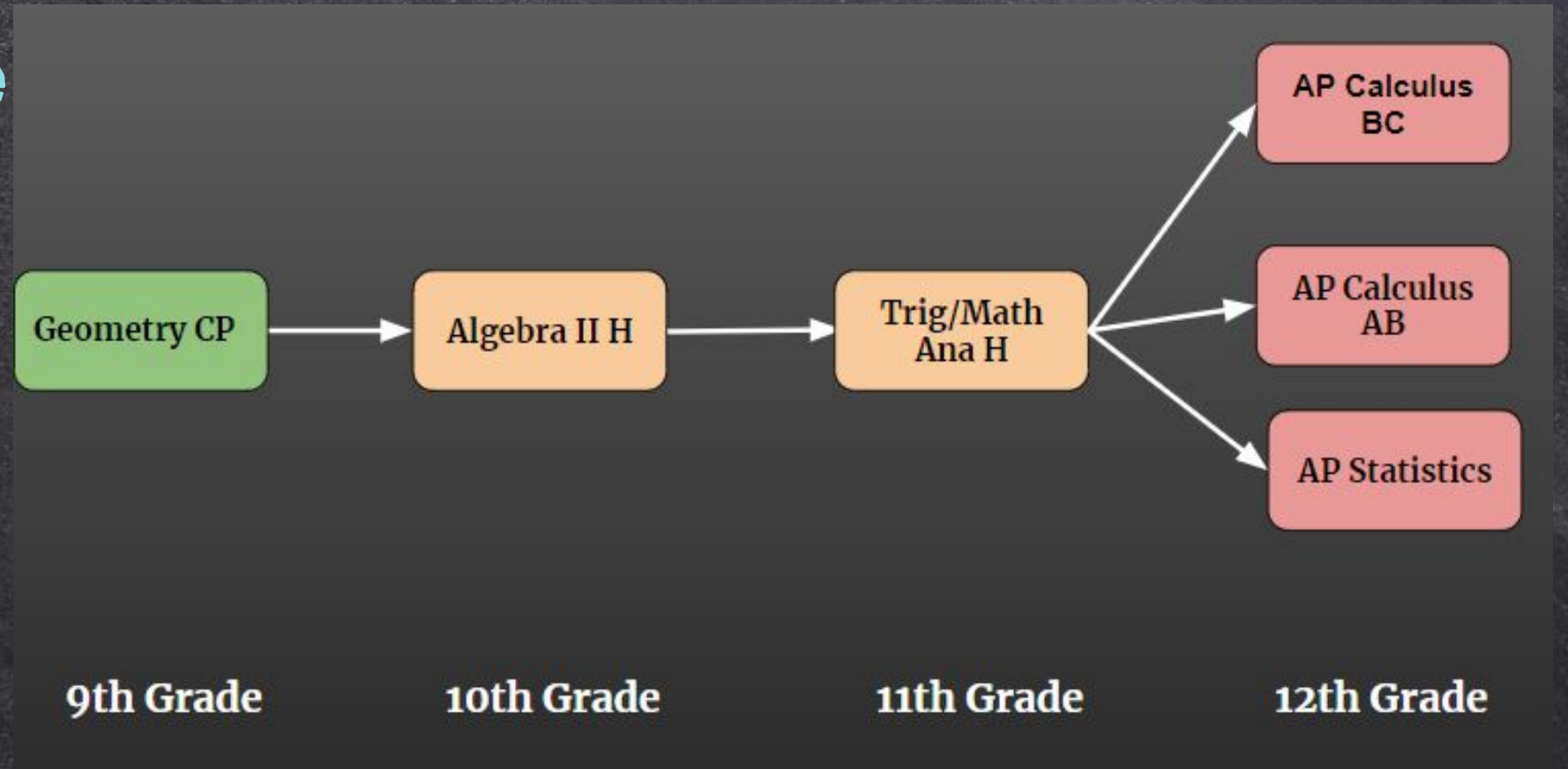
Geometry CP → Algebra II H → Trig/Math Ana H → AP Calculus BC / AP Calculus AB / AP Statistics

9th Grade   10th Grade   11th Grade   12th Grade

Typical Math Pathways

Geometry H

Geometry H → Algebra II H → Trig/Math Ana H → AP Calculus AB / AP Calculus BC / AP Statistics

9th Grade	10th Grade	11th Grade	12th Grade

Typical Math Pathways

Algebra II H

Algebra II H → Trig/Math Ana H → AP Calculus AB → AP Calculus BC

Trig/Math Ana H → AP Calculus BC → AP Statistics

Trig/Math Ana H → AP Statistics

9th Grade   10th Grade   11th Grade   12th Grade
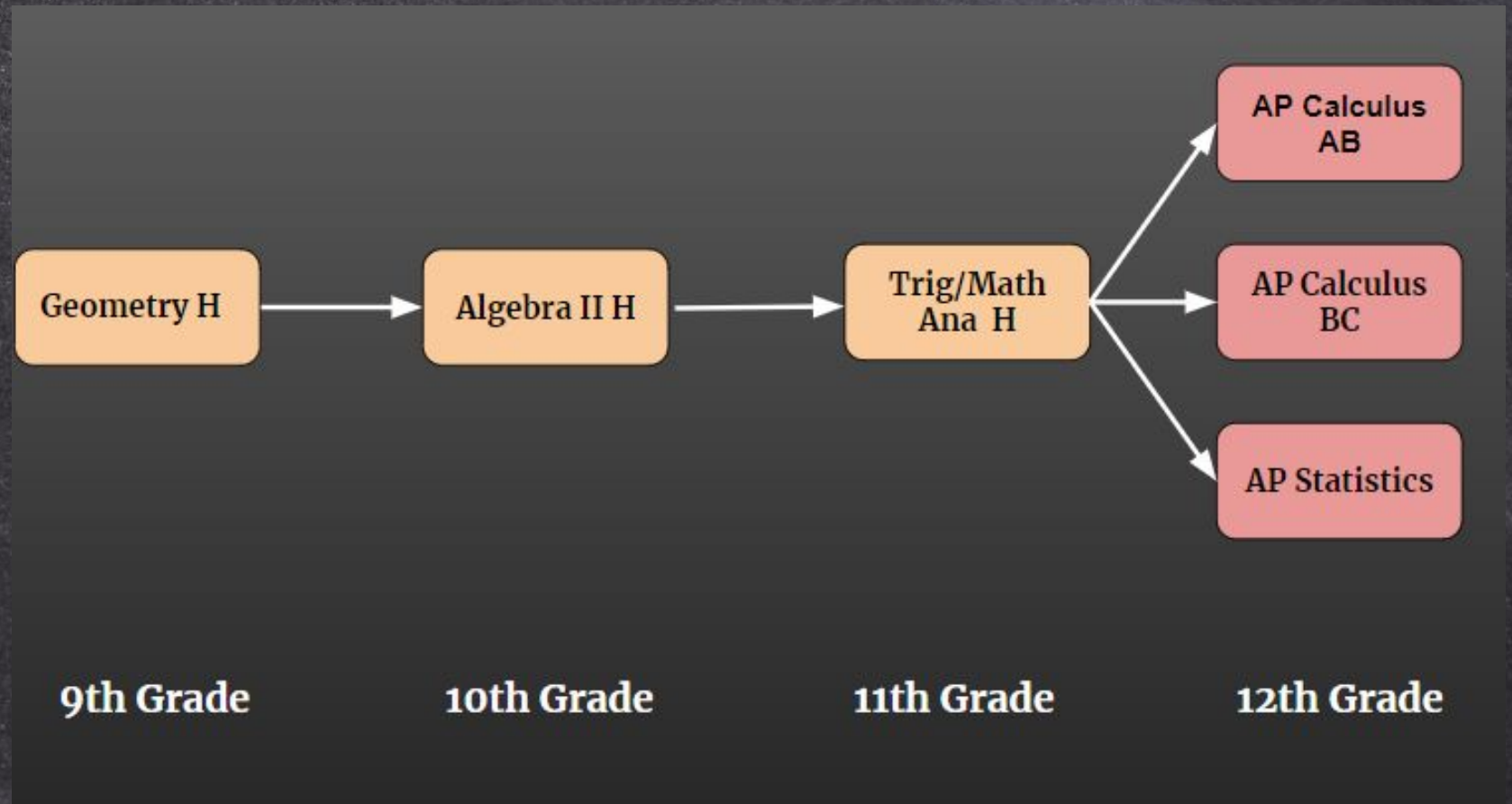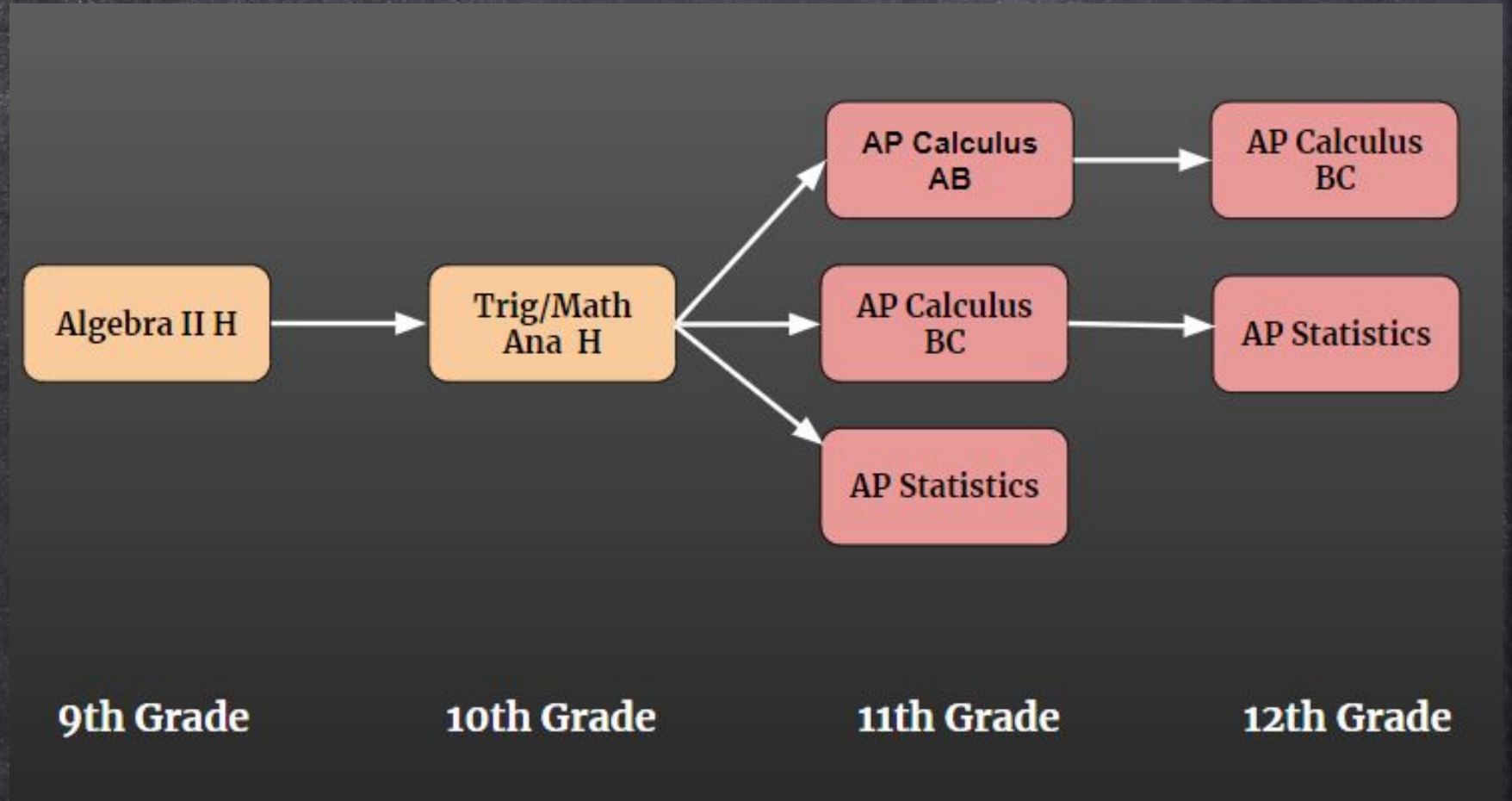
What We are Excited About

Data Science

Link to Stanford Information

How LAHS and MVHS Math are Unique

LAHS

General Math/Math Mastery being added back for EL program*

Algebra 1 + Support Class - Two Periods of Math

Algebra 2 Support Class

Essential Math Concepts - Co-Taught Course. For rising seniors aiming to go to 2-year college

Focus on MP2: Reason abstractly and quantitatively using Data Talks

MVHS

Algebra 1 Co-taught option for additional support

Algebra 1 Enhanced -> Geo/Alg2 S1 -> Geo/Alg2 S2 is a three year loop that students have with the same teacher for additional support

Focus on MP1: Make sense of problems and persevere in solving them by incorporating math literacy strategies

Challenges

At MVHS, Math Mastery is often the landing ground for our students who come from different countries throughout the school year and are behind on their foundational math skills.

Math Mastery does not provide them with math credit and often leads to challenges with graduation requirements.

It is also a challenge to provide curriculum that can range from addition/subtraction to solving equations.

Data Points: How We Measure Effectiveness

Grade Distributions given out at Semester and Quarter

Many course teams give common assessments

Course teams discuss the percentage D's/F's and try to explore reasons

Look at overall assessment results as a course team

Ideas are shared on how to support students with D's/F's

Discuss ways to re-teach and re-assess

2021-22 Data Points: Students with a Math Tutor

How the Data was Gathered
- Google Form survey shared with all LAHS and MVHS math teachers in November 2021
- Survey questions linked here
- In addition to math tutor data, feedback on how comfortable students were with math, frequency of Tutorial/Act period usage, frequency of Tutorial Center usage and whether students had tutors for other subjects was gathered.

Considerations
- Only 34% of current math students took the survey
- Fidelity of data depends on honest and accurate student answers
- AP Computer Science data not included

2021-22 Data Points:
Number of Students Taking Math Classes

	TOTAL (LAHS and MVHS)	LAHS	MVHS
Total # of Students	4,449	2,130	2,319
Total # of Students in Math	4,082 ~92%	1,974	2,108
Total # of Students Who Answered the Survey	1,394 ~34%	694	700
Total # of Students with Math Tutors[1]	193 ~14%	92 ~13%	101 ~14%

[1]Based on the students who answered the survey

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2021-22 Data Points: Students with Tutors

Current Math Course	8th Grade Math Course			
	CC8 (180 surveyed)	Algebra I (593 surveyed)	Geometry (487 surveyed)	Other (134 surveyed)
Algebra I	3/25 ~12%	2/32 ~6%	2/8 25%	5/34 ~15%
Algebra II	8/48 ~17%	19/128 ~15%	2/42 ~5%	4/21 ~19%
Calculus	N/A	1/2 50%	0/1 0%	N/A
Geometry	1/40 ~3%	9/85 ~11%	1/4 25%	1/15 ~7%
Trigonometry/Math Analysis	3/9 ~33%	3/43 ~7%	1/12 ~8%	1/7 ~14%
Statistics	6/33 ~18%	4/67 ~6%	0/17 0%	1/12 ~8%

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2021-22 Data Points: Students with Tutors

Current Math Course	8th Grade Math Course			
	CC8 (180 surveyed)	Algebra I (593 surveyed)	Geometry (487 surveyed)	Other (134 surveyed)
Algebra II Honors	1/13 ~8%	24/106 ~23%	18/161 ~11%	4/9 ~19%
AP Calculus AB	0/2 0%	4/18 ~22%	5/20 25%	0/3 0%
AP Calculus BC	N/A	3/29 ~10%	10/57 ~18%	2/7 ~29%
AP Statistics	0/5 0%	3/26 ~12%	3/59 ~5%	0/5 0%
Multivariable Calculus	1/1 100%	1/2 50%	1/35 ~3%	0/9 0%
Trigonometry/Math Analysis Honors	2/4 50%	21/55 ~38%	13/71 ~18%	0/12 0%

Professional Learning:

CMC South
- 6 teachers (AVHS, LAHS, MVHS)

CMC North
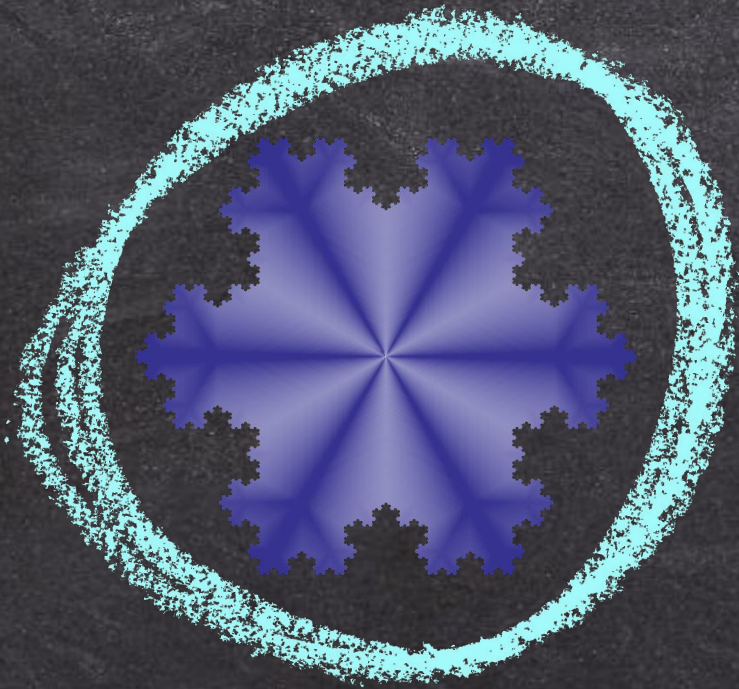- 5 teachers (LAHS, MVHS)

Reimagining Math Book Club

11 teachers (AVHS, LAHS, MVHS)

Data Science Training Course

Teachers TBD
(LAHS, MVHS)

Summer Cls for Course Teams

Thank you!

Credits:

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