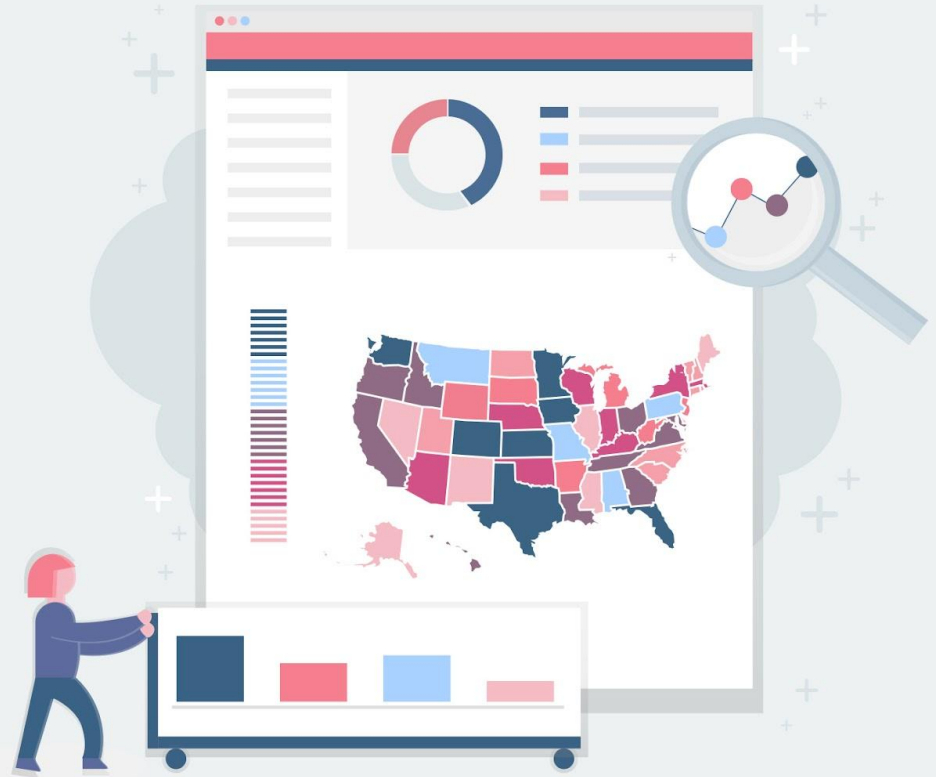




RAND AMERICAN **EDUCATOR** **PANELS**

Exploring National Math
Educator Data
October 24 2024



Presenters



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MGT



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RAND

Goals and Agenda

1. Introduce the RAND American Educator Panel surveys
2. Provide a live Bento demonstration
3. Explore national math educator survey data in Bento

Time	Item
5 min	Introductions
10 min	AEP overview
5 min	Bento overview
30 min	Scavenger hunt!
10 min	Q&A

American Educator Panels: Overview

The American Educator Panels (AEP) are **nationally representative**



American
Teacher
Panel

25,000+
teachers



American
School Leader
Panel

8,000+
principals



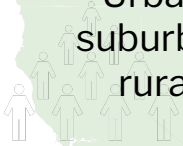
American
School District
Panel

1000+
superintendents

Panelists are selected at random to reflect the diversity of the country

Geography

Urban,
suburban,
rural



Demographics

Race,
ethnicity,
gender, age

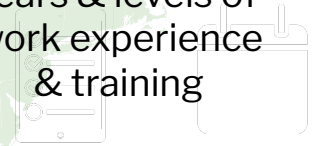


Economics

High-, middle-, &
low-income
families, schools,
neighborhoods

Experience

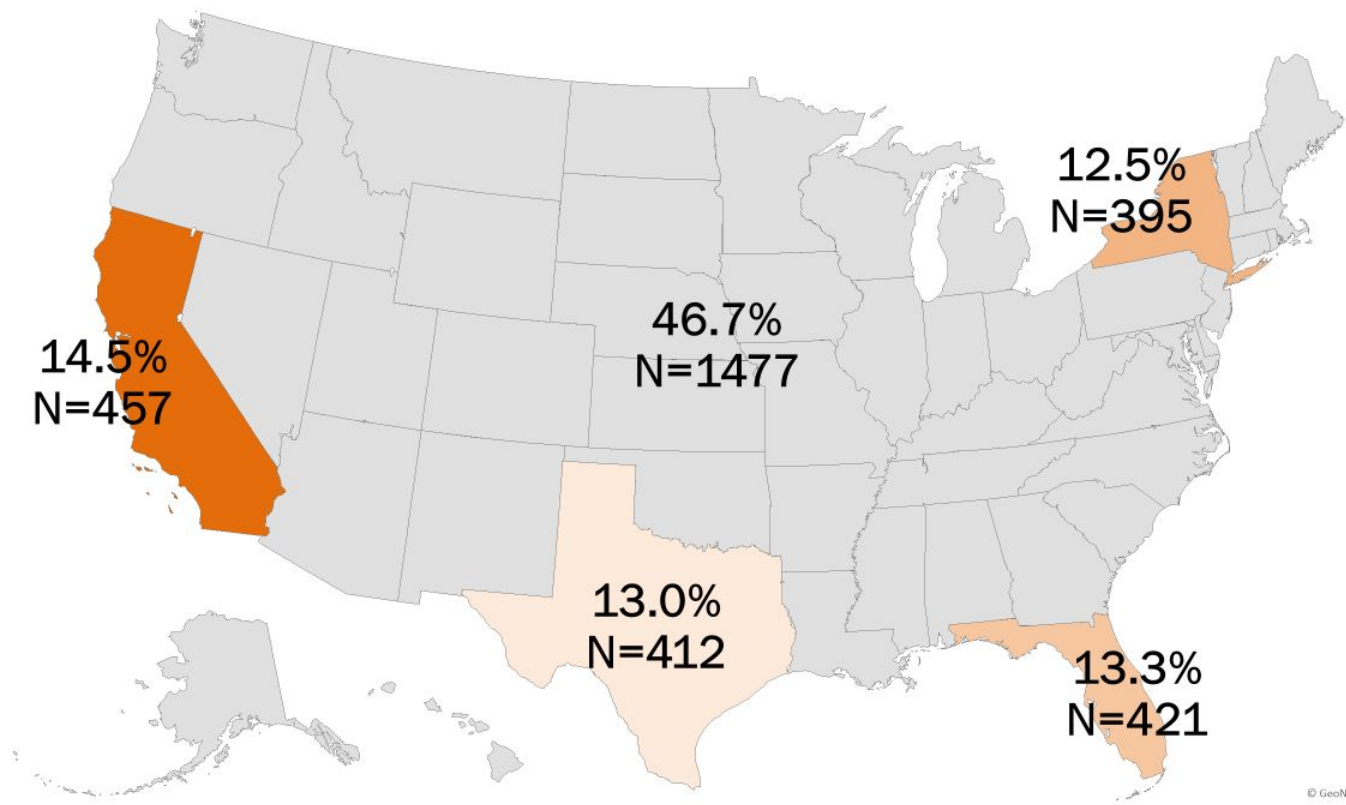
Years & levels of
work experience
& training



	American Mathematics Educator Study Survey (AMES)
Years Available:	Sp2023, Sp2024
Survey Samples:	Surveys go to national samples of K-12 public school mathematics teachers and K-12 public school leaders Oversamples of teachers and principals in CA, FL, NY, TX
Broad Topics:	Math Coursetaking, Mathematics Instructional Resources, Mathematics Instruction, Professional Learning and Teacher Support for Mathematics Instruction, How District Leadership and School Culture Supports Mathematics Instruction, Data-Informed Improvement, School-Community Collaboration, Student Access and Opportunity, Career and Postsecondary, Teacher Workforce
Sample of the Research Questions You Could Address Through AMES School Leader Survey	<ul style="list-style-type: none"> ● What math courses do high schools across the U.S. most commonly offer? To what extent are course offerings different depending on school demographics? ● What mathematics curriculum materials do schools most commonly require or recommend in CA, FL, NY, and TX? ● How prepared are school leaders to help teachers with various aspects of their math instruction? ● To what types of student data do school leaders have access, and for what purposes do they use those data?
Sample of the Research Questions You Could Address Through AMES Teacher Survey Data	<ul style="list-style-type: none"> ● What types of teacher preparation programs did teachers in various states participate in? Does teacher preparation vary by student demographics? ● What supplemental curriculum materials do teachers use the most? ● How do teachers spend their mathematics instructional time? What activities do they devote the most, and least, time to during a typical mathematics lesson? ● How common is the use of Artificial Intelligence by mathematics teachers? For what purposes do mathematics teachers turn to Artificial Intelligence tools to streamline their work?

Grades Served and State Oversamples

	<u>Grade</u>		
	<u>N</u>	<u>%</u>	
Pre-K	44	1.4	
Kinder	505	16.0	
1st	558	17.7	
2nd	537	17.0	
3rd	515	16.3	
4th	514	16.3	
5th	457	14.5	
6th	301	9.5	
7th	287	9.1	
8th	327	10.3	
9th	425	13.4	
10th	494	15.6	
11th	482	15.2	
12th	452	14.3	



Some Key Takeaways Thus Far From AMES Results



Tracking students into math classes by achievement level starts early in many schools, and particularly large and low-poverty middle schools.



Teacher recommendations are one of the most common ways of tracking students into math classes.



Students in high-poverty schools, small schools and rural schools were less likely to have **access to an Advanced Placement mathematics course** than other students.



Principals perceive **student absenteeism, staffing shortages and pressure to cover material on assessments** as the largest obstacles to student learning in mathematics

For more on all AMES findings, go to:

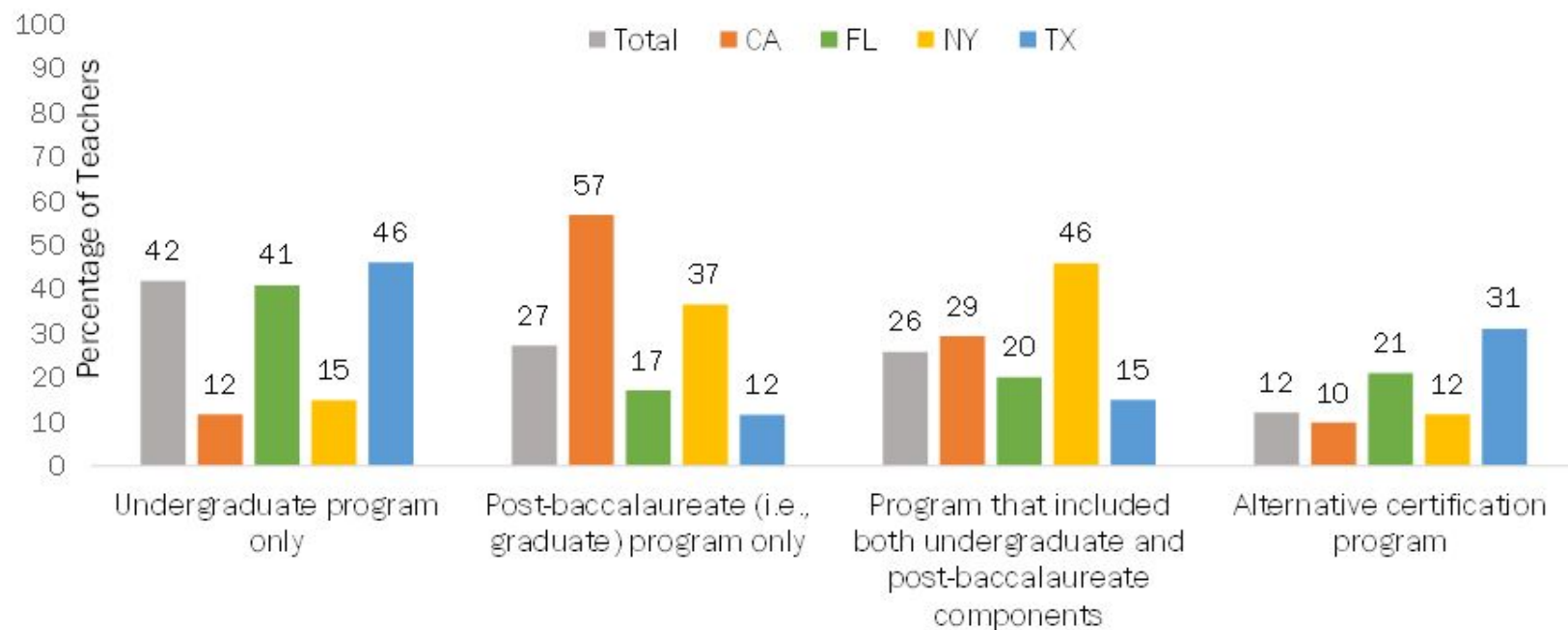
<https://www.rand.org/education-and-labor/projects/american-mathematics-educator-study.html>

Desmos Math and iReady are most commonly used published middle school math materials, although more NY and TX teachers report regularly using self- or district-created materials compared to others

Percentage of Teachers Reporting Using Material Once a Week or More

Most Commonly Used Middle School Materials	National	CA	FL	NY	TX
Mathematics curriculum materials I create myself	33	29	24	46	47
Other mathematics curriculum materials not listed	26	30	39	24	24
Mathematics curriculum materials my school or district created	19	16	25	27	30
Desmos Math 6-8 (Illustrative Math or Amplify)	16	18	11	15	22
Ready or iReady Classroom Mathematics (Curriculum Associates)	13	15	6	21	9
Illustrative Math (Kendall Hunt)	13	11	2	16	1
enVision Math - 2020 (Savvas Learning Company, formerly Pearson)	8	2	27	19	0
Maneuvering in the Middle (Maneuvering in the Middle)	8	4	1	9	29
Engage NY (NYSED)	7	3	2	26	0
Eureka Math (Great Minds)	7	3	2	2	4

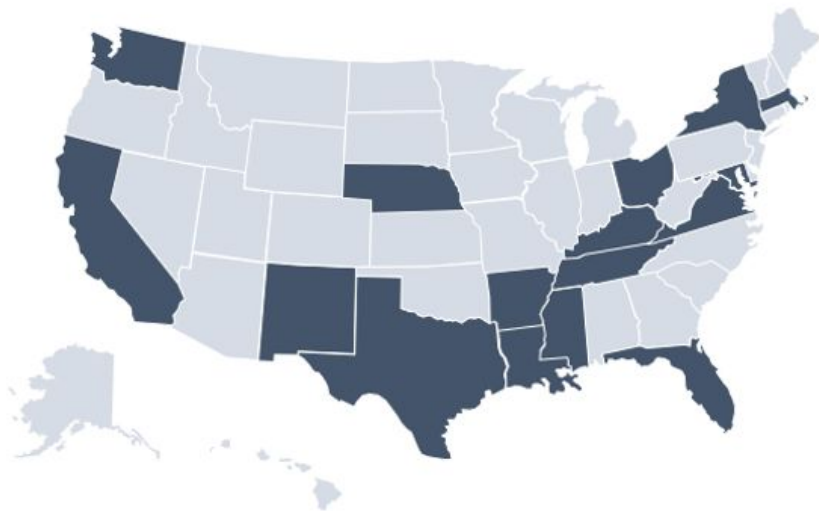
More TX and FL teachers reported participating in an alternative certification or only-undergrad teacher preparation program



	American Instructional Resources Survey (AIRS)
Years Available:	Sp2019, Sp2020, Sp2021, Sp2022, Sp2023
Survey Samples:	<p>Surveys go to national samples of K-12 public school English, mathematics, and science teachers and K-12 public school leaders</p> <p>Oversamples of teachers in: CA, DE, FL, LA, MA, MS, NE, NM, NY, RI, TN, WI (since 2019 ,WI removed starting in 2022); AR, KY, OH, and TX (since 2021); MD (since 2022)</p>
Broad Topics:	School Instructional Material Requirements, Teachers’ Instructional Material Use, Teachers’ Perceptions of Instructional Materials, Classroom Instructional Practice, Principal Supports for Use of Instructional Materials, Professional Development to Support Use of Instructional MAterials, Benchmark Assessments and Alignment with Curriculum Materials, School Culture
Sample of the Research Questions You Could Address Through AIRS School Leader Survey	<ul style="list-style-type: none"> ● What instructional materials are recommended or required by schools and districts? ● What benchmark assessments are administered for English language arts and mathematics? ● What priorities dictate the instructional materials that principals recommend or require? ● What priorities dictate the professional development that principals recommend providing to teachers? ● Who is the primary decisionmaker about the instructional materials that teachers use in their classrooms?
Sample of the Research Questions You Could Address Through AIRS Teacher Survey Data	<ul style="list-style-type: none"> ● What instructional materials do teachers use for their instruction, and how much of classroom instructional time do they use them for? ● To what extent do principals evaluate or support their use of their instructional material? ● How much professional development do they receive that focuses on their main materials and how useful do they perceive that professional development to be?

AIRS Sampling Methodology

AIRS comprises of a nationally representative teacher and principal survey with **teacher oversamples in 18 states.**

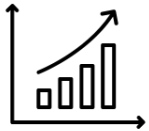


Oversampled states are member states of the CCSSO High-Quality Instructional Materials and Professional Development (IMPD) Network + CA, FL, NY, and WA

Some Key Takeaways Thus Far From AIRS Results



- ▶ **Teachers commonly modify and cobble together lesson plans** using multiple materials rather than using a single textbook



- ▶ Since 2019, a growing percentage of teachers use **standards-aligned materials** for ELA and Math instruction



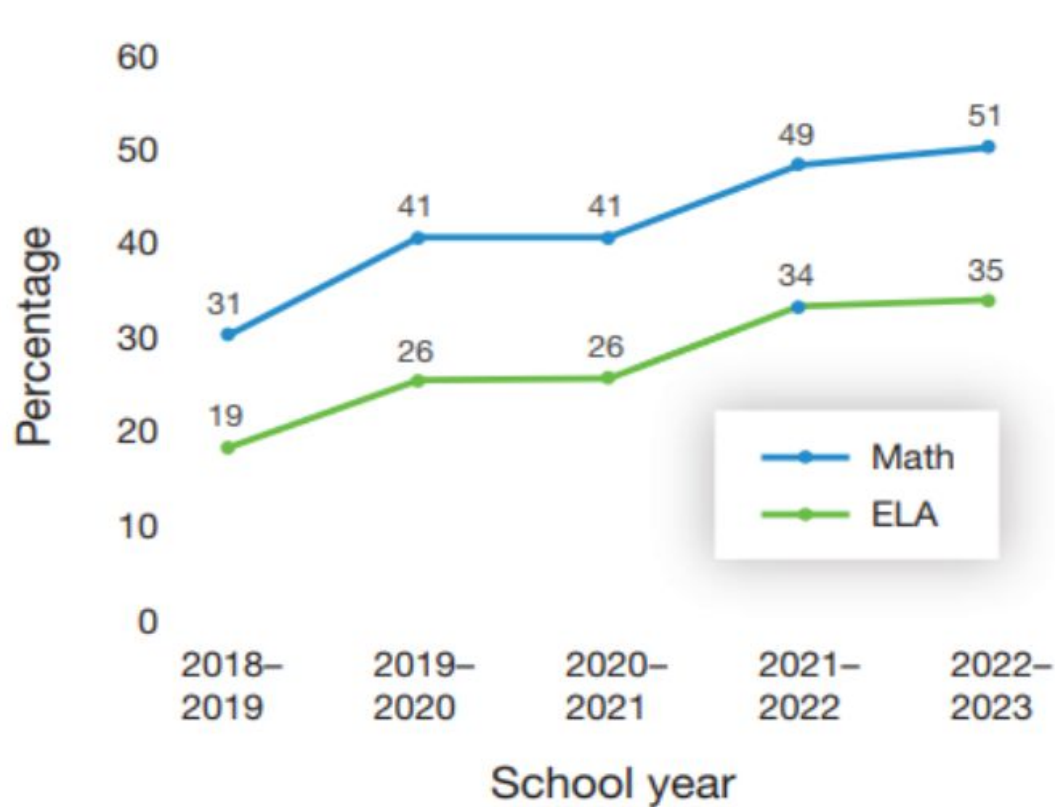
- ▶ One in four teachers reported that **limitations placed on how teachers can discuss race and gender** in the classroom influenced their choice of instructional practices or curriculum materials



- ▶ **Collaborative learning** is the most frequent modality of professional learning teachers report participating in

For more on all AIRS findings, go to:
<https://www.rand.org/education-and-labor/projects/airs.html>

Over time, more teachers report using standards-aligned materials regularly



What is Bento?



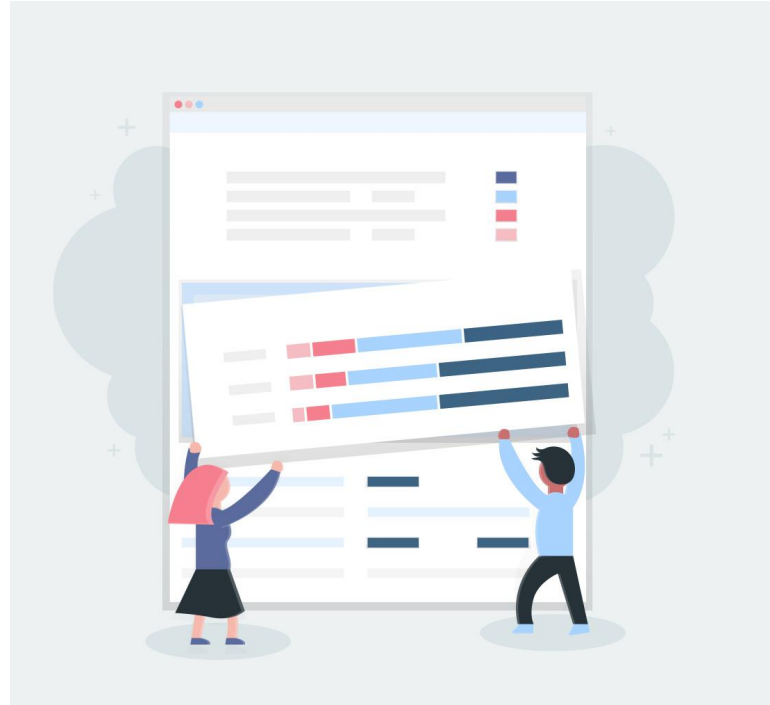
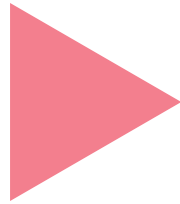
Bento is a free-to-use data visualization tool for anyone who relies on education data to inform their work.

Bento also provides free access to survey data from public school teachers, principals, and superintendents across the country.

What Data Can I See in Bento?

Survey	Years Available
American Mathematics Educator Study (AMES) Survey	2023, 2024
American Instructional Resources Survey (AIRS)	2019-2024 inclusive
American School District Panel (ASDP)	Fall 2023, Spring 2024
Learn Together Survey (LTS)	2019, 2020, 2021, 2022
COVID-19 Response	Spring 2020, Fall 2020, Spring 2021

Bento Demo



Activity: Scavenger Hunt!

Based on your topic of interest, use Bento to explore one of the following questions:

Curriculum Materials: Math (AIRS 2024 Teacher Survey)

- How do teachers in your state of interest describe the level of difficulty of the mathematics materials required or recommended by their school or district?

Access to AP Courses (AMES 2024 School Leader Survey)

- How does access to AP courses differ between schools in cities, suburbs, towns, and rural areas?

Use of AI Tools (AMES 2024 Teacher Survey)

- How often do teachers report using AI tools in their mathematics teaching? Does this differ by school ethnic composition?

Answer Key: Curriculum Materials: Math

- Question
 - How do teachers in your state of interest describe the level of difficulty of the mathematics materials required or recommended by their school or district?
- Set Up
 - Navigate to the Survey Explorer, then View all Surveys, then 2024 AIRS Teacher, then click the section Curriculum Materials: Math and navigate to CMM 612
 - Create filters to focus on your state of interest
 - Filter: Click Filters, then Location, then click the dropdown to the right of “Select Locations” and pick your state of interest and press “Apply”
 - You will now see data only from teachers in your state of interest
 - To compare answers in your chosen state to the national average, click on the 3 dot menu in the top right corner of the chart and select benchmark

Note: You can also explore this question through the “segment” feature

Answer Key: Curriculum Materials: Math

- Question
 - How do teachers in your state of interest describe the level of difficulty of the mathematics materials required or recommended by their school or district?
- Set Up
 - Open Bento and navigate to the Survey Explorer, then View all Surveys, then 2024 AIRS Teacher, then click the section Curriculum Materials: Math and navigate to CMM 612
 - Once you are on the survey page, create a segment to just look at your state of interest.
 - Segment: Click Segment, then Location, then click the dropdown to the right of “Select Locations”, pick your state of interest, then label the name in “Enter Segment name”, and press “Apply”
 - You will now have narrowed the aperture to just see data from teachers in your state of interest
 - If you’d like to compare this question in your state of interest to the national average, make sure the “All Respondents” checkbox is checked under Segments Applied

Note: You can create multiple segments to compare across various states

Answer Key: Access to AP Courses

- Question
 - How does access to AP courses differ between schools in cities, suburbs, towns, and rural areas?
- Set Up
 - Open Bento and navigate to the Survey Explorer, then Surveys by Topic, then Math Instruction and Resources, then School and Courses Offered, then 2024 AMES School Leader, then SCR 046
 - Once you are on the survey page, create segments for School Urbanicity
 - Segment: Click Segment, then Attribute, then click the dropdown to the right of "Select Attribute" and click School Urbanicity. Use the "x" to un-select the groups you do not want to include, label the segment in "Enter Segment name" and press "Apply"
 - Note: You can create multiple segments to compare across City, Suburban, Town, and Rural Schools

Answer Key: Use of AI Tools

- Question
 - How often do teachers report using AI tools in their mathematics teaching? Does this differ by school ethnic composition?
- Set Up
 - Open Bento and navigate to the Survey Explorer, then Surveys by Topic, then Math Instruction & Resources, then Math Instructional Resources then 2024 AMES Teacher, then INR 475
 - Once you are on the survey page, create segments for states of interest
 - Segment: Click Segment, then Attribute, then click the dropdown to the right of "Select Attribute" and click School Ethnic Composition. Use the "x" to un-select the groups you do not want to include, label the segment in "Enter Segment name" and press "Apply"

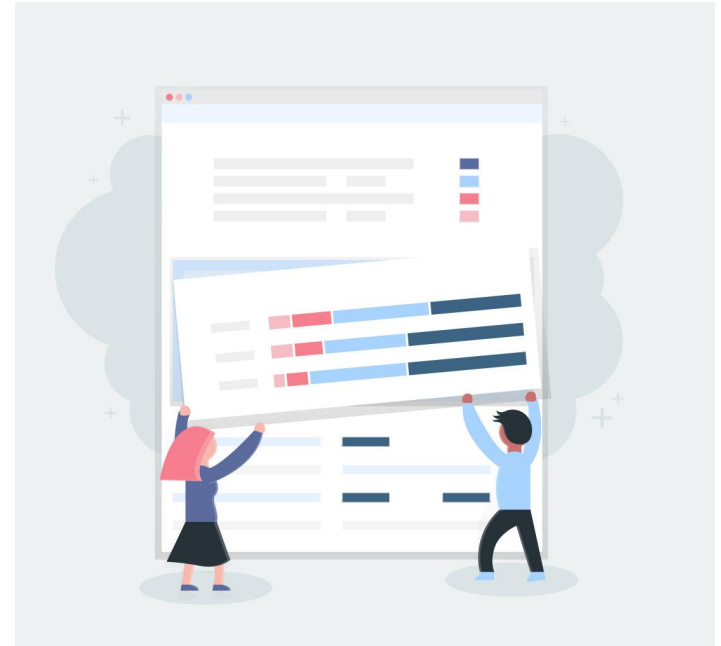
Questions?



Thank you!



Exploring curriculum survey data with **Bento**, a survey data visualization and analysis tool



Sign up for a Bento account: www.bentobento.info