

Exploring the Literacy Skills of Adults in Your State and County

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Wisconsin Literacy Fall Conference | October 5, 2021

Presentation Outline

1. What is PIAAC?
2. What are the major findings from PIAAC?
3. What is the PIAAC Skills Map?
4. What are the skills of adults in Wisconsin?
5. How can the PIAAC Skills Map be used to inform your work?
6. Where can you find the PIAAC Skills Map and other information?
7. What's new?

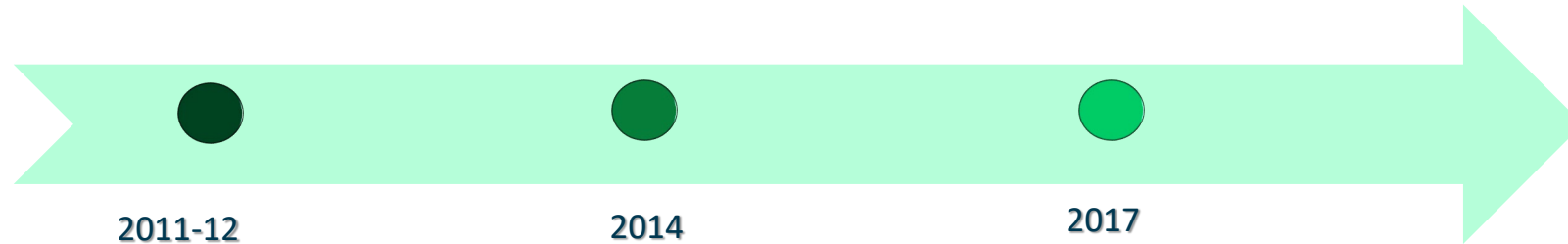
What is PIAAC?

Poll: Have you heard of PIAAC before?

What is PIAAC?

- The **Program for the International Assessment of Adult Competencies (PIAAC)** is a cyclical, large-scale assessment first administered in 2011-12 in 24 countries including the United States
- Developed by the Organization for Economic Cooperation & Development (OECD)
- The goal of PIAAC is to assess and compare the basic cognitive and workplace skills needed for successful participation in 21st-century society and the global economy.
- Administered to a nationally representative sample of 16- to 65-year-olds, residing in each country, irrespective of nationality, citizenship, or language status.

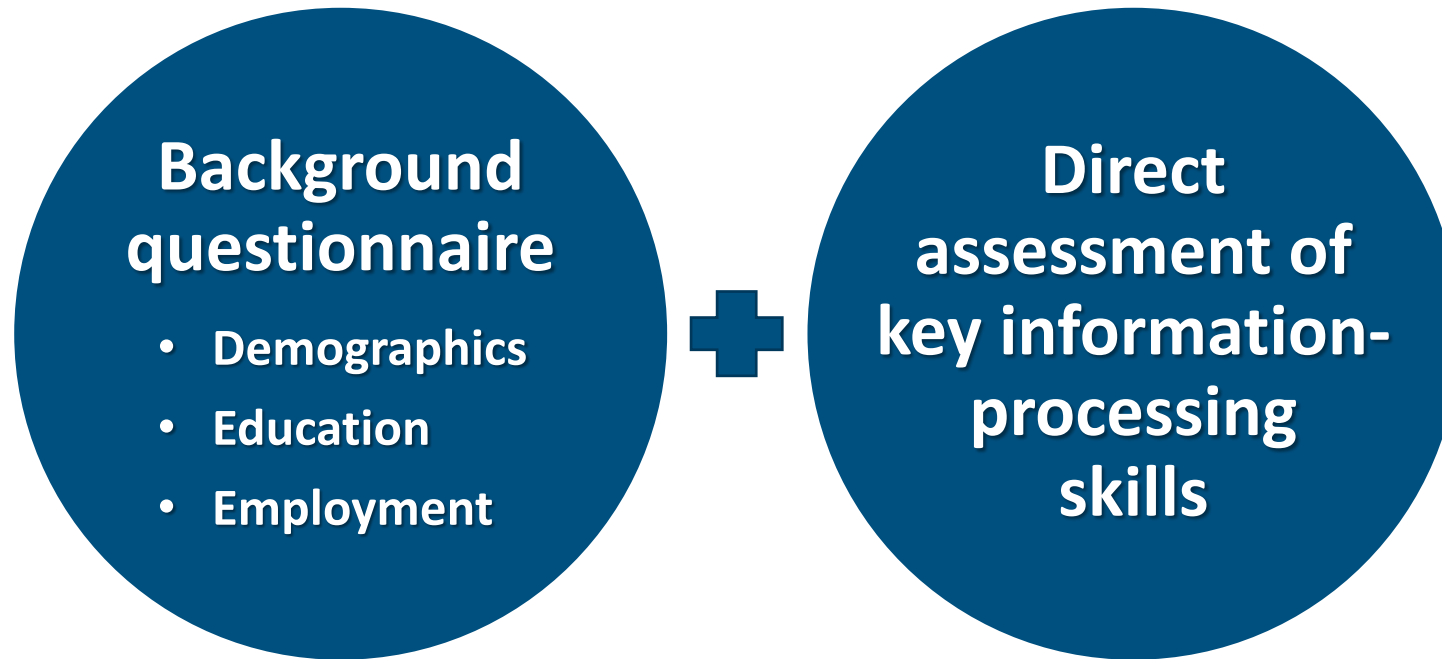
U.S. Cycle 1 National Data Collections





PIAAC International Cycle 1: 2011-2017 (38 countries or regions, including the US)

- Data
- 2012-14 {
 - Round 1 – Household sample of adults (5,010) Ages 16-65
 - Round 2 – Household sample of adults (3,660) Ages 16-65, and 66-74
 - 2017 {
 - Round 3 – Household sample of adults (3,660) Ages 16-65, and 66-74







PIAAC Main Components



Modes of PIAAC

Laptop computer  or Paper-and-Pencil 

Two main Assessment components:

- Background Questionnaire (45 minutes) 
 - ▢ Conducted either in English or Spanish
- Assessment Items (60 minutes, conducted only in English)
 - Literacy  
 - Numeracy  
 - Digital Problem Solving Only 

PIAAC Assessment: Domains and Definitions

- **Literacy** is understanding, evaluating, using and engaging with written texts
 - to participate in society,
 - to achieve one's goals, and
 - to develop one's knowledge and potential.
- **Numeracy** is the ability to access, use, interpret, and communicate mathematical information and ideas, in order to engage in and manage the mathematical demands of a range of situations in adult life.
- **Digital Problem Solving:** involves using digital technology, communication tools and networks to acquire and evaluate information, communicate with others and perform practical tasks.

Reporting PIAAC results :

- **Average Scores:** reported on a scale of 0-500 for all domains.
- **Proficiency Levels:** reported as the percentages of adults scoring at six performance levels (from below level 1 to level 5) in literacy and numeracy and at four performance levels in problem solving in technology-rich environments (from below level 1 to level 3).

For description of PIAAC levels check: <https://nces.ed.gov/surveys/piaac/measure.asp>

Proficiency Levels: Literacy

Level	Description
Level 1 or below (Below 226 points*)	Adults at this level range from functionally illiterate to those who have difficulty using or comprehending basic written material.
Level 2 (226–275 points*)	Adults at this level are nearing proficiency but may still struggle to perform tasks using text-based information.
Level 3 or above (Above 275 points*)	Adults at these levels can work proficiently with information and ideas in texts.

*On a 0 to 500-point scale

Literacy example item: Level 1

The test-taker is asked to identify a job that meets specific criteria.

Unit 1 - Question 1/3

Which company is looking for an employee to work at night?

95% of U.S. adults can perform at level 1 or better

Search Results for Job H

6 Jobs Found

Office Assistant

Client Manager

Guard

Nurse

At vero eos et accusamus et iusto
dignissimos ducimus qui
voluptatum deleniti atque
dolores et quas molestias

Nobis est eligendi optio
quo minus id quod maxime
possimus, omnis voluptas
omnis dolor repellendus

Hic occaecati cupiditate
similique sunt in culpa qui
harum quidem rerum
distinctio. Nam libero

Quibusdam et aut officiis debitis aut rerum
necessitatibus saepe eveniet ut et voluptates
repudiandae sint et molestiae non recusandae.
Itaque earum rerum hic tenetur a sapiente

The test-taker is presented with the results of a search from a simulated website for job hunting.

The answer can be found explicitly stated in the job description
“...must be willing to work at night.”

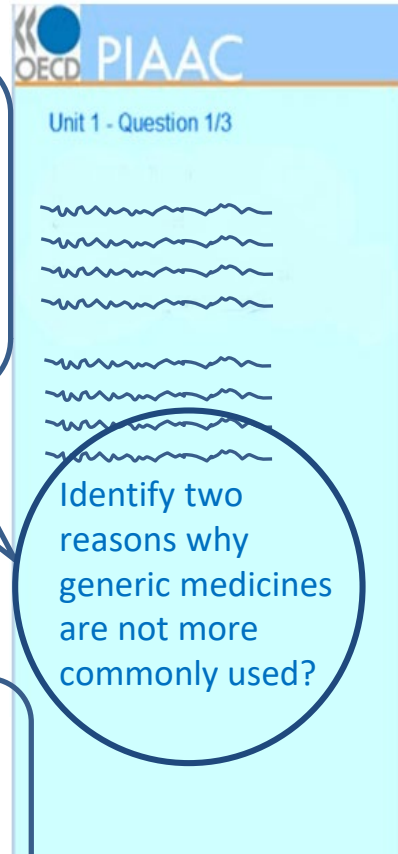
Note: Not an actual replica of test item

Literacy example item: Level 2

The test-taker is asked to identify two reasons for the limited use of generic medicines

Identify two reasons why generic medicines are not more commonly used?

82% of U.S. adults can perform at level 2 or better



Generic medicine: Not for the Swiss

By Mary Jane Doe

At vero eos et accusamus: et iusto odio dignissimos ducimus qui blanditiis praesentium voluptatum deleniti atque corrupti quos dolores et quas molestias excepturi sint. Nobis est eligendi optio, cumque nihil impedit quo minus id quod maxime placeat facere possimus, omnis voluptas assumenda est, omnis dolor repellendus. Temporibus autem Hic accedat cupiditate: non provident, similique sunt in culpa qui officia deserunt Et harum quidem rerum facilis est et expedita distinctio. Nam libero tempore, cum soluta

Quibusdam et aut officiis: debitis aut rerum necessitatibus saepe eveniet ut et voluptates repudiandae sint et molestiae non recusandae. Itaque earum rerum hic tenetur a sapiente

At vero eos et accusamus: et iusto odio dignissimos ducimus qui blanditiis praesentium voluptatum deleniti atque corrupti quos dolores et quas molestias excepturi sint. Nobis est eligendi optio, cumque nihil impedit quo minus id quod maxime placeat facere possimus, omnis voluptas assumenda est, omnis dolor repellendus. Temporibus autem

The test-taker is presented with a newspaper article on generic medicine.

The test-taker must not be distracted by statements that are reasons that generic medicines are cheaper.

Identify the two explicit reasons that generic medicines are not commonly used.

Note: Not an actual replica of test item

Proficiency Levels: Numeracy

Level	Description
Level 1 or below (Below 226 points*)	Adults at this level may range from functionally innumerate to those that have difficulty using and comprehending numeric information.
Level 2 (226–275 points*)	Adults at this level are nearing proficiency but may struggle to work with some numeric information.
Level 3 or above (Above 275 points*)	Adults at this level can work proficiently with mathematical information and ideas.

*On a 0 to 500-point scale

Numeracy example item: Level 2

61% of U.S. adults can perform at level 2 or better

OECD PIAAC

Unit 1 - Question 1/3

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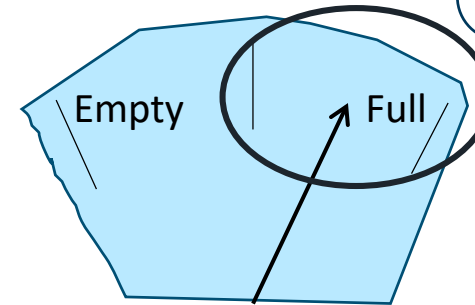
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About how many gallons remain in the gas tank?

18

The test-taker is told the car holds 24 gallons of gas and is asked to calculate a fraction of that amount.

Car's Gas Gauge



The test-taker is presented with a graphic showing a car's gas gauge indicating that it is about $\frac{3}{4}$ full.

The test-taker needs to estimate that $\frac{3}{4}$ of 24 gallons means 18 gallons remain in the tank.

Numeracy example item: Level 3

39% of U.S. adults can perform at level 3 or better

OECD PIAAC

Unit 1 - Question 1/3

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How much would you pay if you bought both pairs on sale?

\$ 48.95

The test-taker is asked to calculate the total amount one would need to pay for both shoes during the sale.

The test-taker is presented with information about a shoe sale.

Running Shoes

SALE! Buy one pair – get the second (of equal or lesser value) for half price!



\$29.50



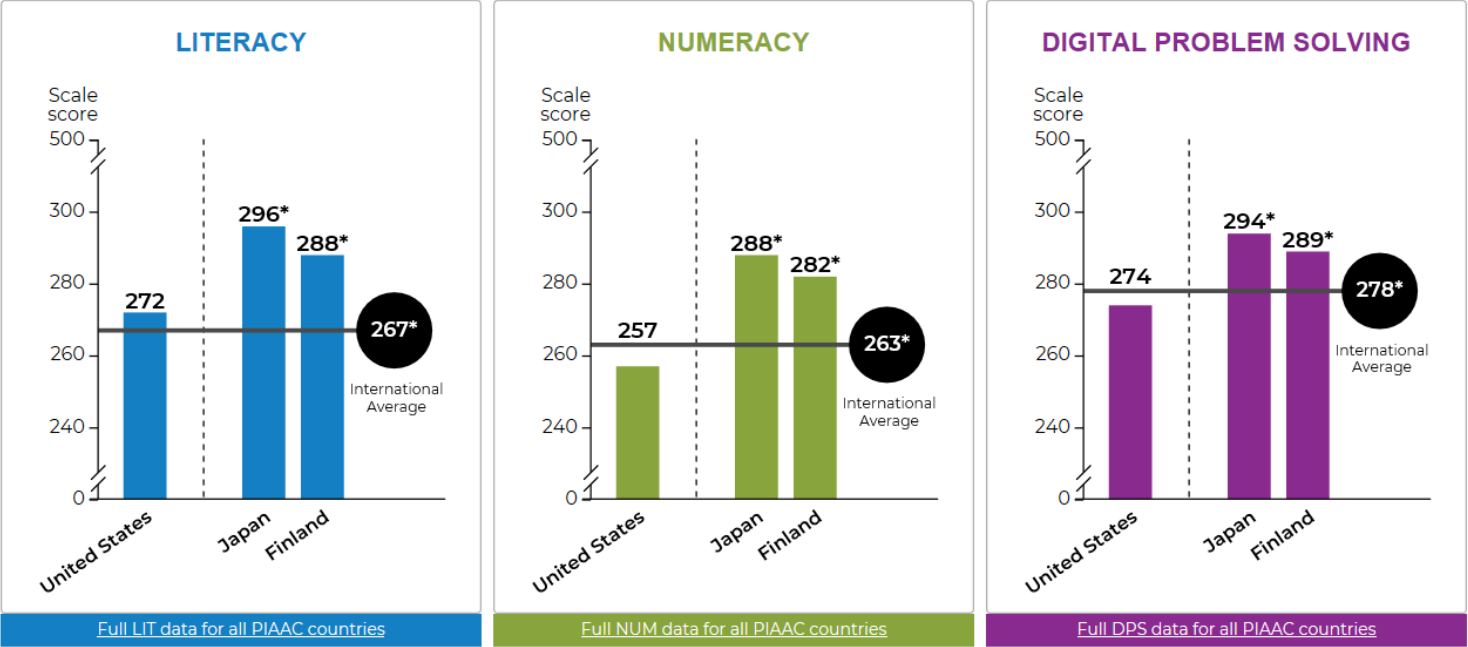
\$34.20

The test-taker needs to calculate and enter the correct dollar amount for the two pairs of shoes on sale.

What are the major findings from PIAAC?

U.S. adults scored higher in literacy than the PIAAC international average; however, they scored lower in both numeracy and digital problem solving

Figure 1-A. Average scores on PIAAC literacy, numeracy, and digital problem solving for adults age 16 to 65 for the United States and highest-performing countries: 2012–15



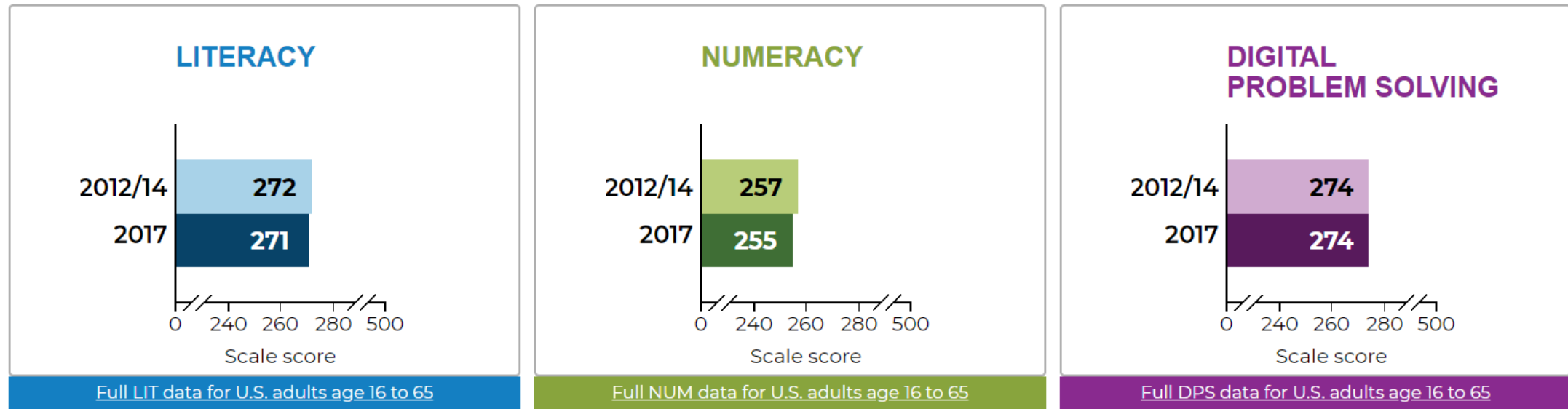
* Significantly different ($p < .05$) from the United States.

NOTE: LIT = Literacy. NUM = Numeracy. DPS = Digital problem solving. Average scores for the United States are compared to the PIAAC international average and highest-performing countries. Results for 23 of the countries were gathered in 2011–12, and an additional 9 participated in 2014–15. The two highest-performing countries are shown, in descending order from left to right within each domain. Results for the United States are shown on the far left within each domain to highlight that comparison.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Organization for Economic Cooperation and Development (OECD), Program for the International Assessment of Adult Competencies (PIAAC), 2012–15.

There was no measurable improvement in skills of U.S. adults age 16–65 in 2017, compared to 2012/14

Figure 1-A. Average scores on PIAAC literacy, numeracy, and digital problem solving for U.S. adults age 16 to 65: 2012/14 and 2017



NOTE: LIT = Literacy. NUM = Numeracy. DPS = Digital problem solving. The PIAAC literacy, numeracy, and digital problem solving scales range from 0 to 500. Some apparent differences between estimates may not be statistically significant. Only statistically significant differences between years are marked with an asterisk. Users may explore other differences via the full data links and using the International Data Explorer tools.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Program for the International Assessment of Adult Competencies (PIAAC), U.S. PIAAC 2017, U.S. PIAAC 2012/2014.

Most recent findings from PIAAC (2017):

Compared to 2012-14:

1. Hispanic adults' average scores improved in both literacy and digital problem solving. The average scores for Whites did not change across any of the three skill areas.
2. Non-native born adults in the United States scored higher in both literacy and digital problem solving than in 2012/14. There was no measurable change in the averages of native-born adults.
3. Although in the 2017 the average adults' amount of schooling has increased, there was a decrease in the average literacy and numeracy scores of those with only a high school education.

Access to more specific results:

1. The 2017 national results and international comparison at:
https://nces.ed.gov/surveys/piaac/current_results.asp
2. Several ready-made presentations on specific subject areas such as :
 - a. Results Overview
 - b. Low-skilled Workers
 - c. Health Status & Skills
 - d. Impact of Parent Education
 - e. Skills of Parents and non-parents
 - f. U.S. Prison Study Results
 - g. Sample PIAAC Tasks

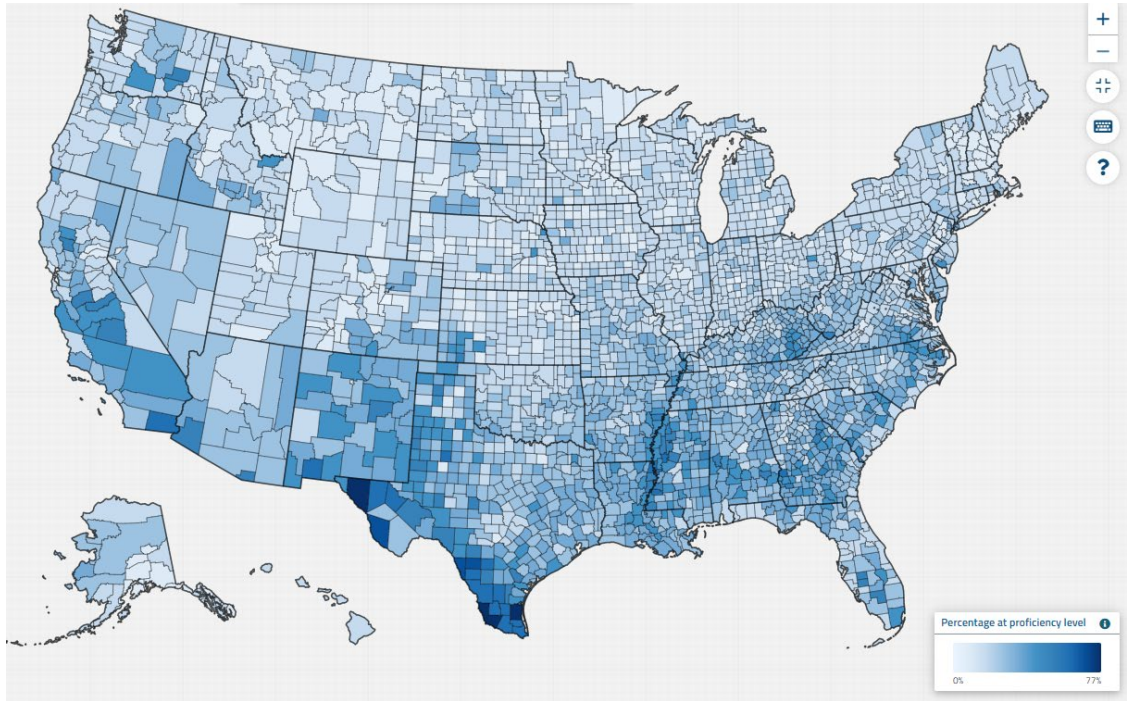


<http://piaacgateway.com/toolkit-modules>

What is the PIAAC Skills Map?

Poll: Have you heard of the PIAAC Skills Map before?

The U.S. PIAAC Skills Map: State and County Indicators of Adult Literacy and Numeracy



NCES' new Skills Map is an online tool that provides the most comprehensive data on the literacy and numeracy skills of adults age 16–74 in all 50 states, the District of Columbia, and for all 3,141 counties.*

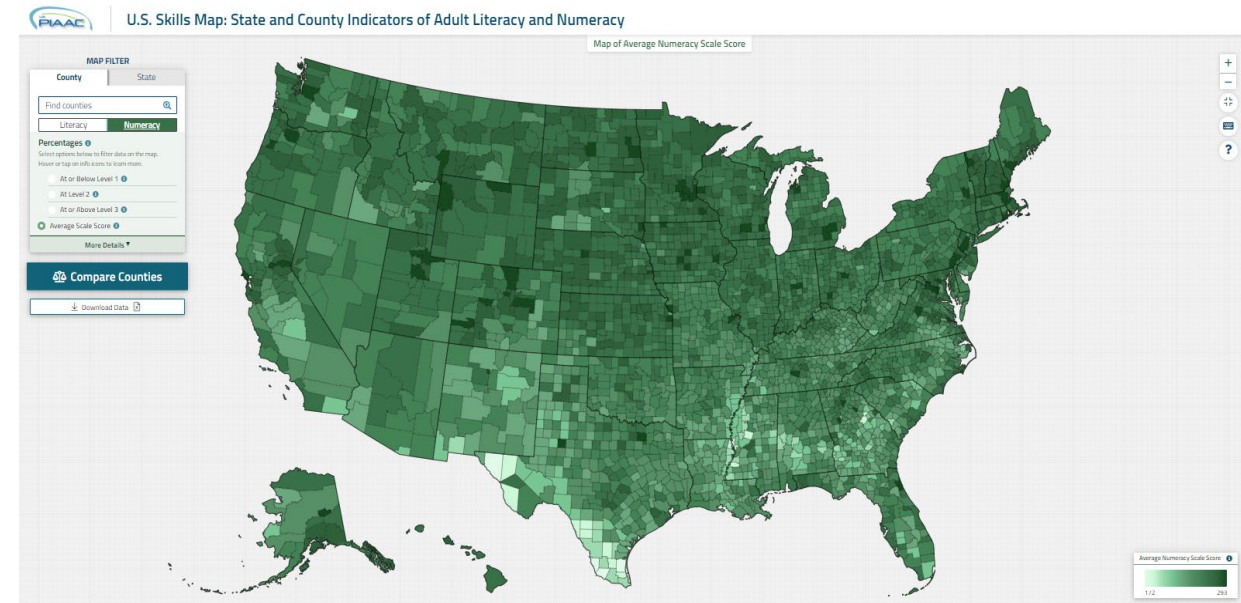
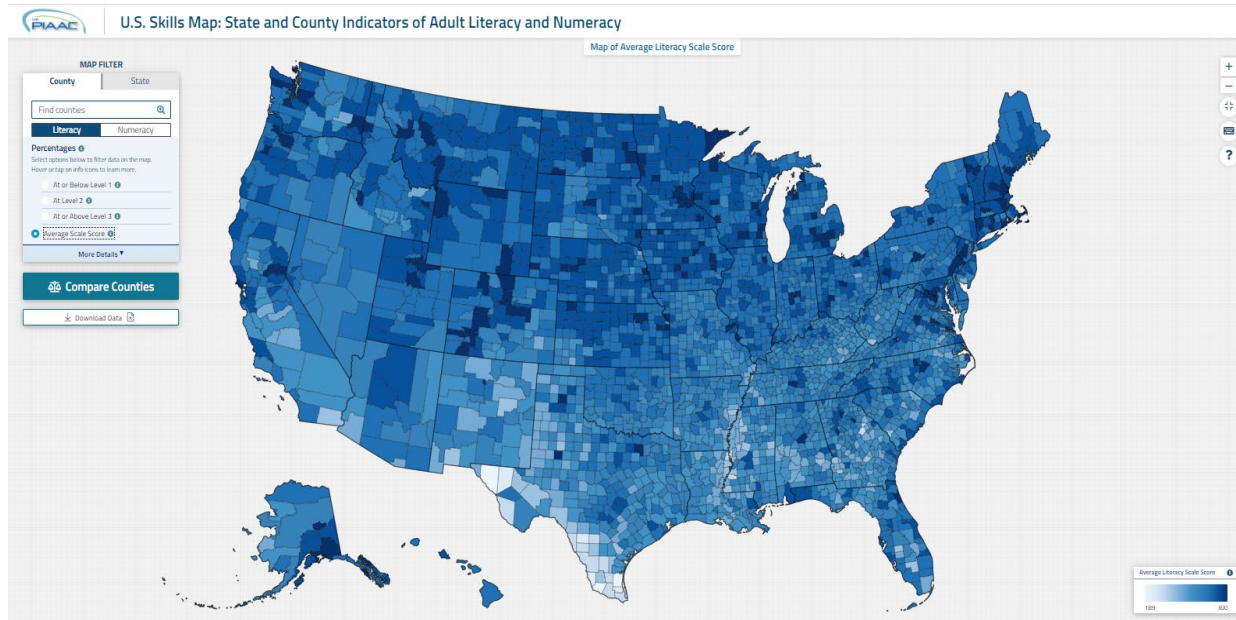
*Using the U.S. Census Bureau's definition of "county" for statistical purposes.

Where do Skills Map data come from?

- The data in the tool are estimates for geographic areas where survey data are inadequate for direct estimation.
- The data were produced using an advanced statistical method generally referred to as small area estimation (SAE).
- NCES produced these reliable estimates using:
 - Combined PIAAC data collected in 2012, 2014, and 2017
 - Data from the American Community Survey (ACS) 2013-17

What information is available in the PIAAC Skills Map?

Literacy and numeracy proficiency data including average scores and...



.... percentages of adults at the lowest, medium, and highest levels for both counties and states

Demographic data from ACS

State Summary Card ×

Select up to 8 variables Download Variable List PDF [↗](#)

Gender <ul style="list-style-type: none"><input type="checkbox"/> % Male<input type="checkbox"/> % Female	English Speaking Ability <ul style="list-style-type: none"><input type="checkbox"/> % Speak English Not Well/ Not at All	Employment Status <ul style="list-style-type: none"><input type="checkbox"/> % Employed<input type="checkbox"/> % Unemployed<input type="checkbox"/> % Not in Labor Force
Race/Ethnicity <ul style="list-style-type: none"><input type="checkbox"/> % White<input type="checkbox"/> % Black<input type="checkbox"/> % Hispanic<input type="checkbox"/> % Asian<input type="checkbox"/> % American Indian/ Alaska Native<input type="checkbox"/> % Native Hawaiian/ Other Pacific Islander<input type="checkbox"/> % Other Race/ Ethnicity	Foreign-Born Population <ul style="list-style-type: none"><input type="checkbox"/> % Foreign-Born Entered U.S. in 2010 and After<input type="checkbox"/> % Foreign-Born Entered U.S. 1990-2009<input type="checkbox"/> % Foreign-Born Entered U.S. Before 1990<input type="checkbox"/> % Foreign-Born Population	Occupation <ul style="list-style-type: none"><input type="checkbox"/> % Management/ Professional Occupation<input type="checkbox"/> % Service Occupation<input type="checkbox"/> % Sales/ Office Occupation<input type="checkbox"/> % Natural Resources/ Construction/ Maintenance Occupation<input type="checkbox"/> % Military Occupation<input type="checkbox"/> % Production/ Transportation/ Moving Occupation
Education <ul style="list-style-type: none"><input type="checkbox"/> % Less Than High School<input type="checkbox"/> % High School/ GED<input type="checkbox"/> % More Than High School	Poverty <ul style="list-style-type: none"><input type="checkbox"/> % Below 100% of Poverty Level<input type="checkbox"/> % Below 150% of Poverty Level<input type="checkbox"/> % SNAP/ Food Stamps	Health <ul style="list-style-type: none"><input type="checkbox"/> % No Health Insurance

SUBMIT (0) **CLEAR ALL**

What are the skills of adults in Wisconsin?

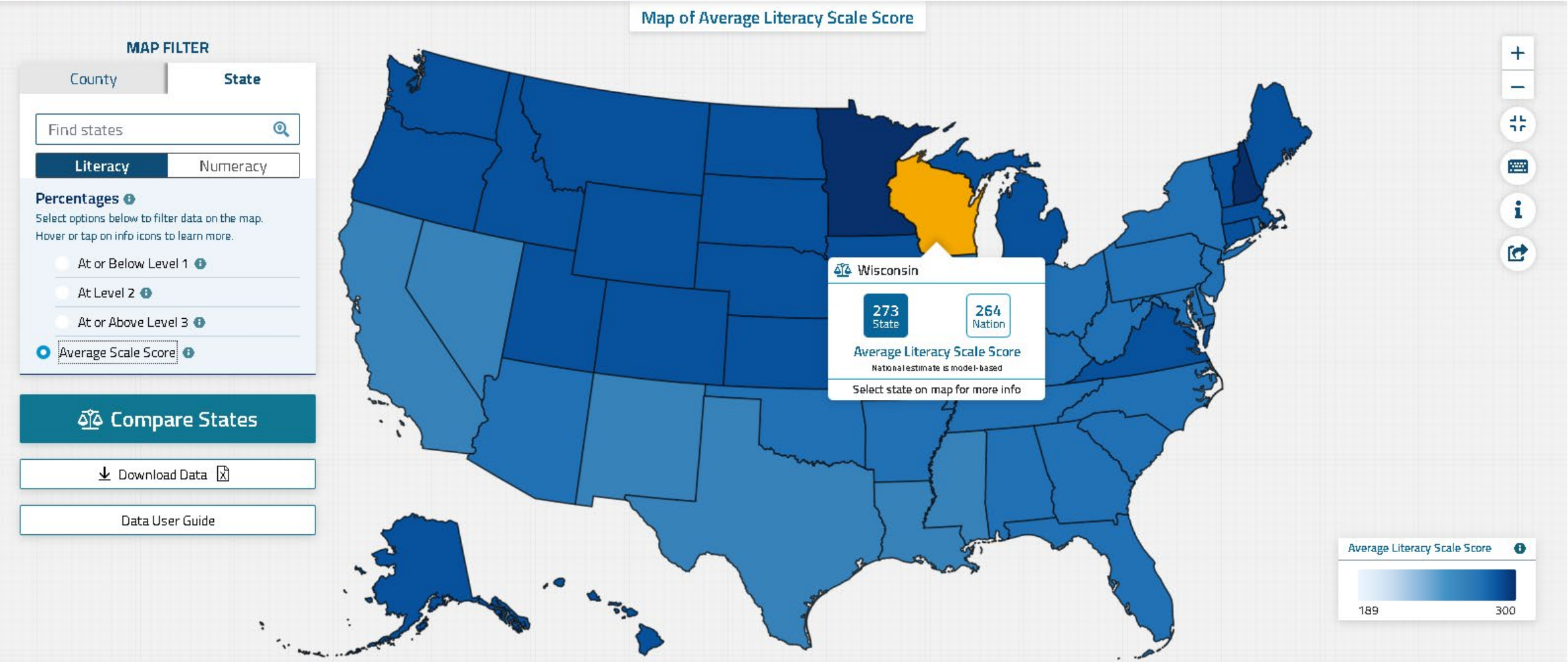
Poll: How do you think the literacy skills of adults in Wisconsin compare to the Nation as a whole?

Poll: How do you think the literacy skills of adults in Wisconsin compare to the Nation as a whole?

Wisconsin is above the national average in literacy and numeracy



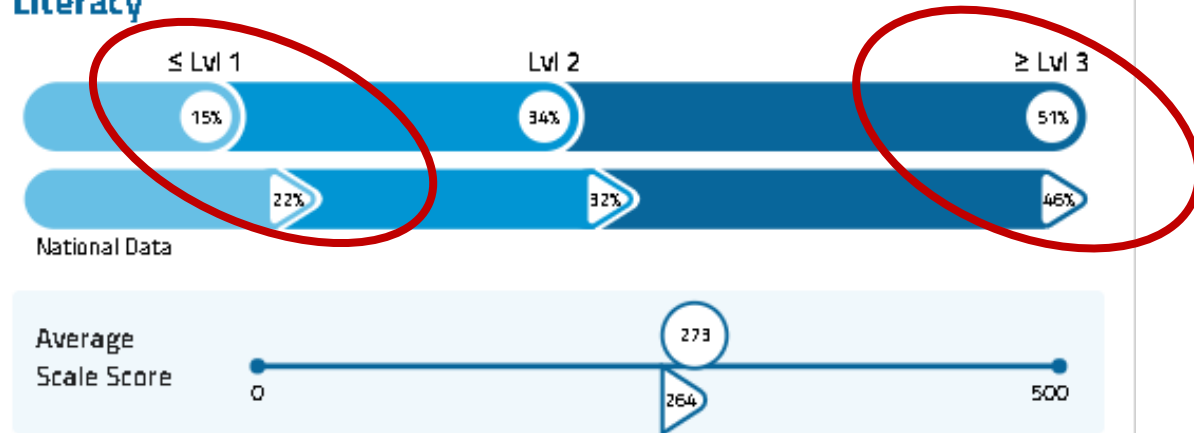
U.S. Skills Map: State and County Indicators of Adult Literacy and Numeracy



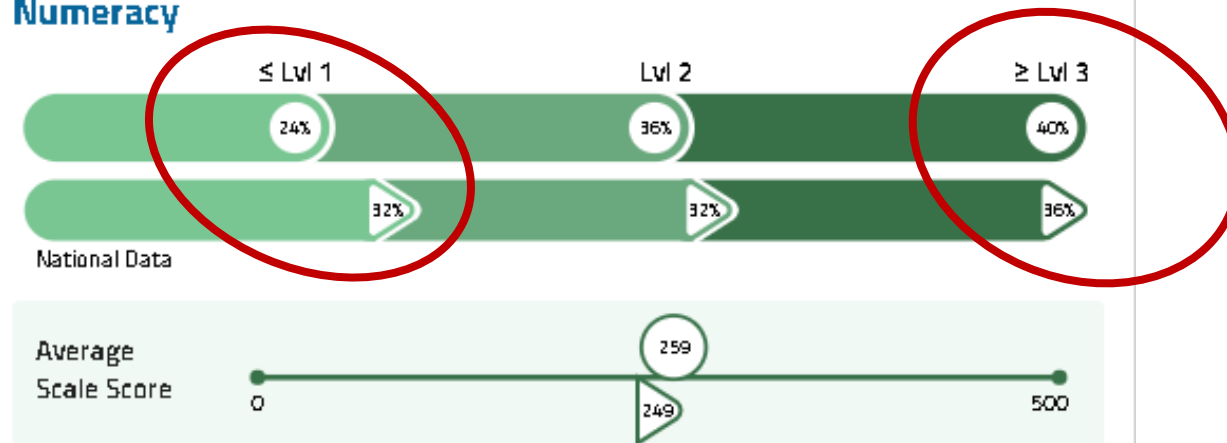
Results ⓘ

☒ National Data

Literacy



Numeracy

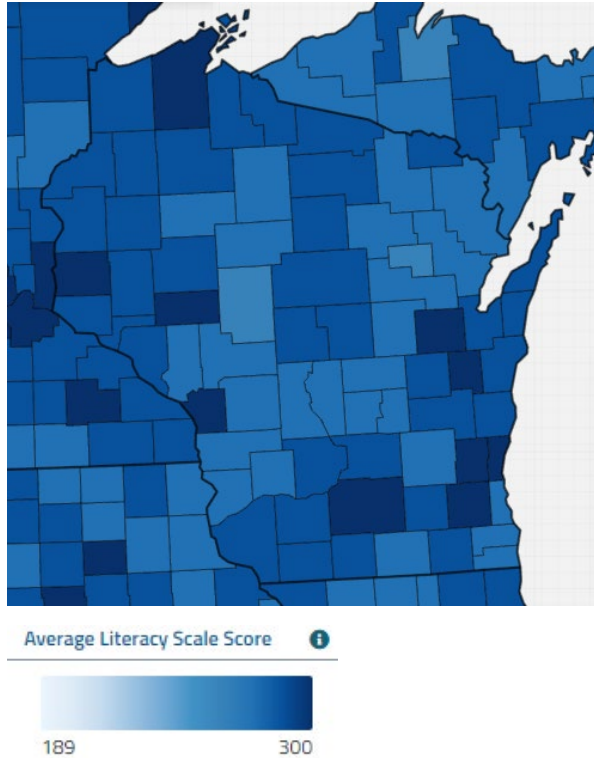


Wisconsin in both literacy and numeracy, compared to the nation, has a

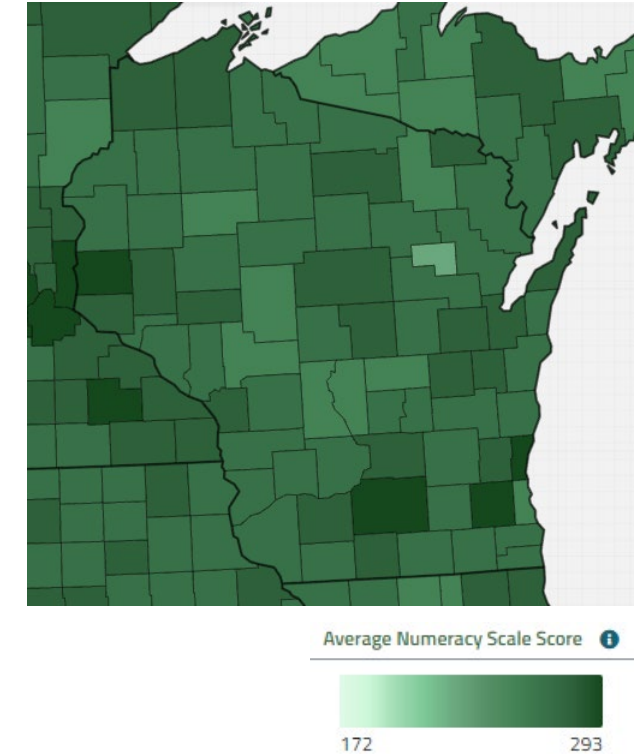
- lower percentage of low skilled adults, and
- higher percentage of high skilled adults

Key ≤ At or Below ≥ At or Above ○ State data ▷ Nation data

Highest-performing counties in Wisconsin by average literacy and numeracy scores:

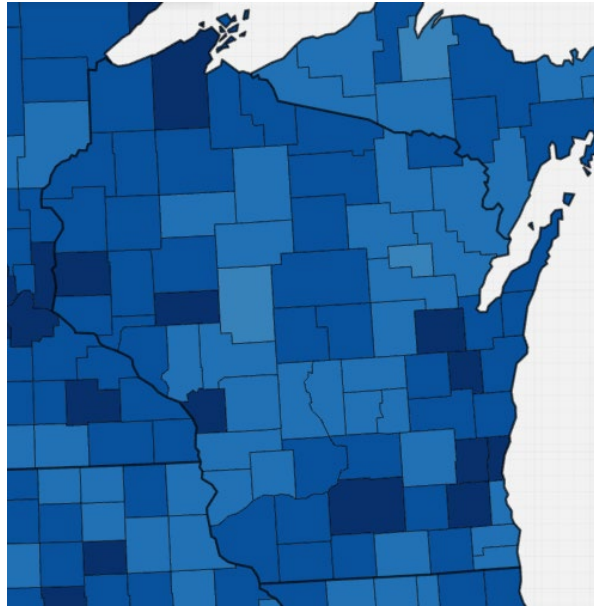


Literacy	County	Numeracy
290	Ozaukee	280
288	Waukesha	278
288	Dane	276
286	St. Croix	276
281	Washington	270



Note: Counties are ordered by descending literacy scores

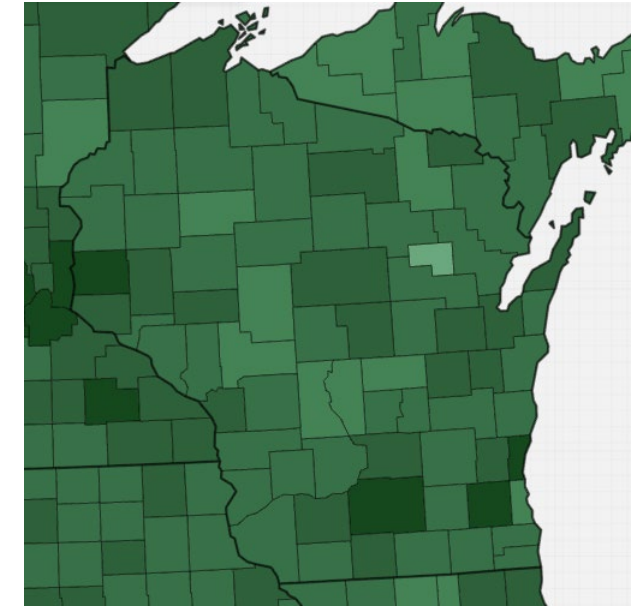
Lowest-performing counties in Wisconsin by average literacy and numeracy scores:



Average Literacy Scale Score ⓘ



Literacy	County	Numeracy
260	Milwaukee	243
260	Juneau	246
259	Adams	244
255	Clark	240
250	Menominee	225



Average Numeracy Scale Score ⓘ



Note: Counties are ordered by descending literacy scores

Walk through results for a county in Wisconsin (Milwaukee County)

How can the PIAAC Skills Map be used to inform your work?

Example 1: Which counties in Wisconsin are likely to have more low-skilled parents who may struggle to support their children's remote learning?

MAP FILTER

County

State

Find counties

Literacy

Numeracy

Percentages

Select options below to filter data on the map.

Hover or tap on info icons to learn more.

At or Below Level 1

At Level 2

At or Above Level 3

Average Scale Score


More Details

Compare Counties

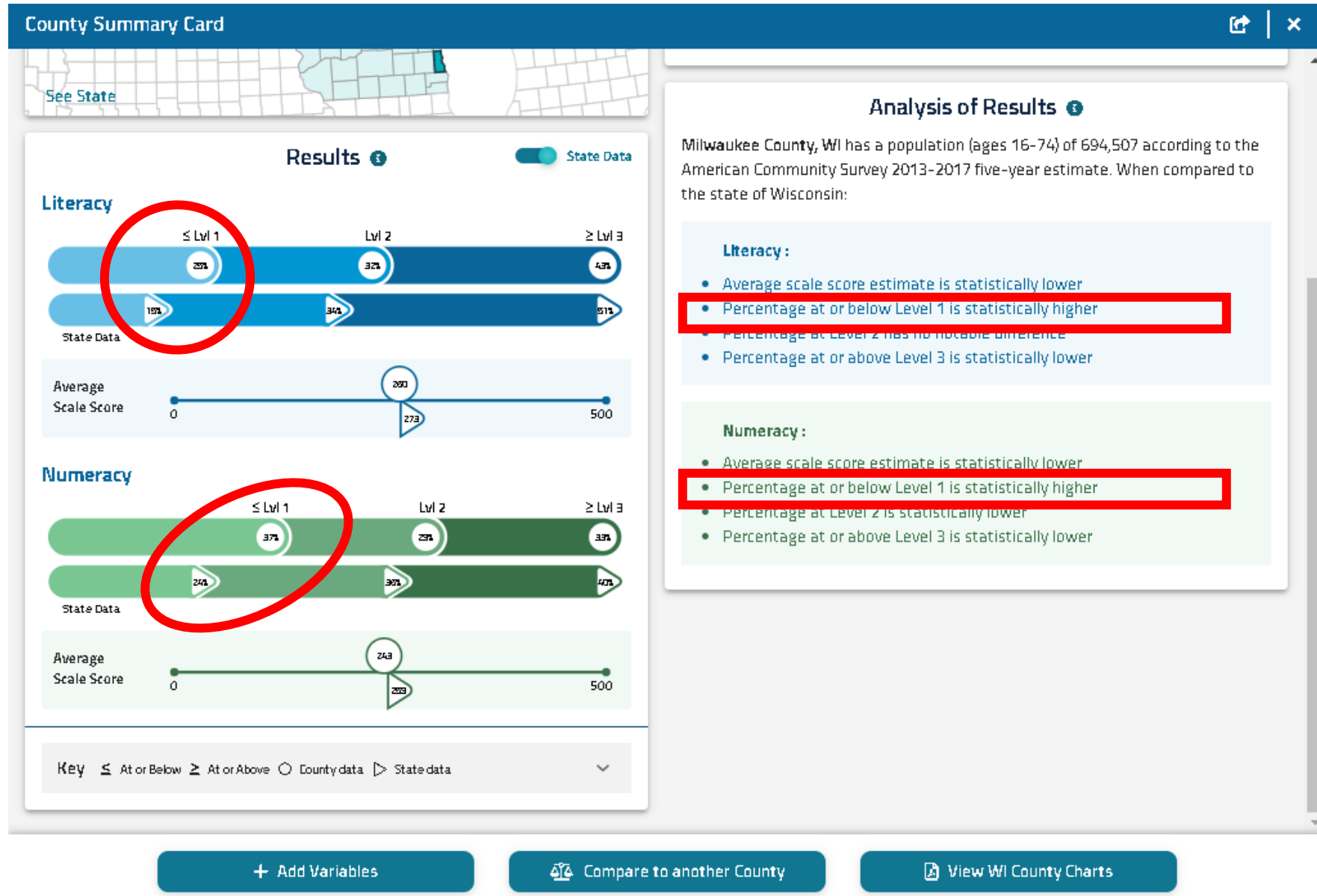
Download Data

A map of Wisconsin showing its county boundaries. Two counties are highlighted with red boxes and red arrows pointing to them. The first box is labeled "Clark County" and points to a county in the central-northern part of the state. The second box is labeled "Milwaukee County" and points to a county in the southeastern part of the state. The map uses a light blue color scheme for the counties.

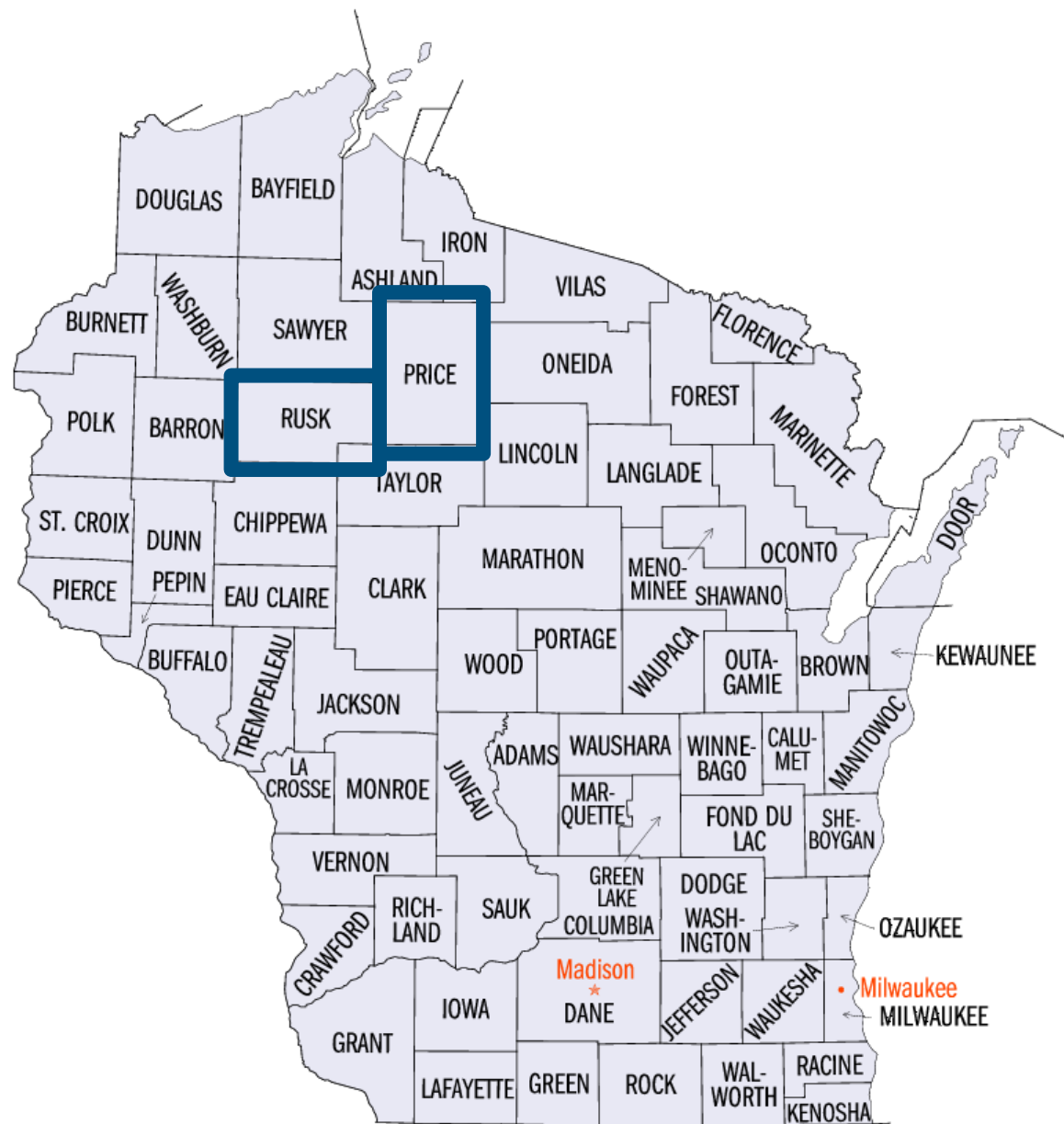
39 | AIR.ORG

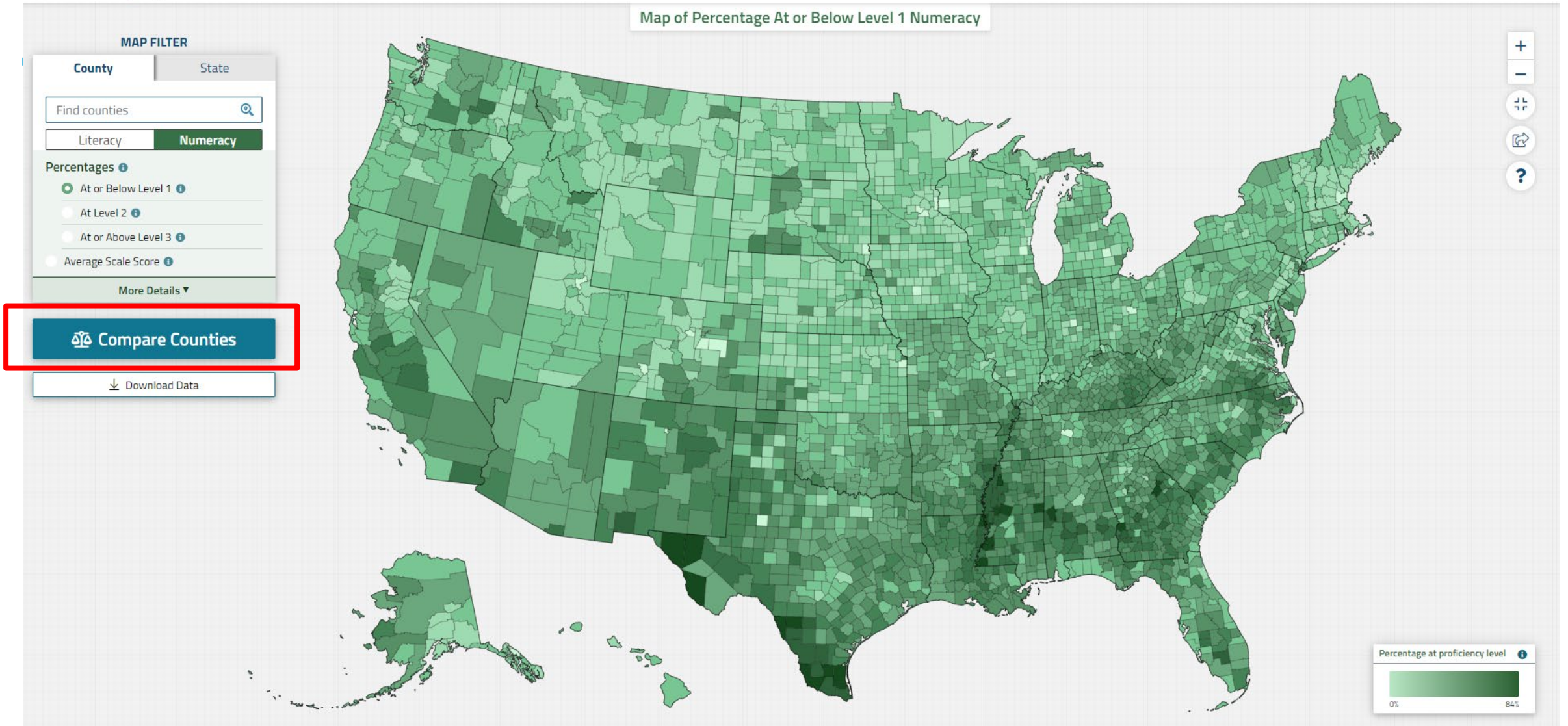
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Milwaukee County, WI



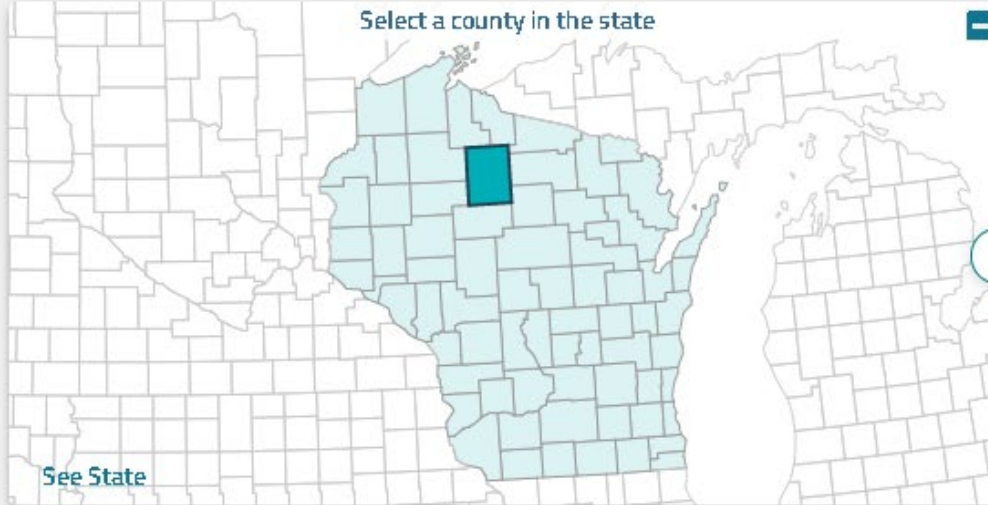
Example 2: Would Rusk County, WI be a good place for a Price County, WI community college to open a satellite campus?





Price County, Wisconsin

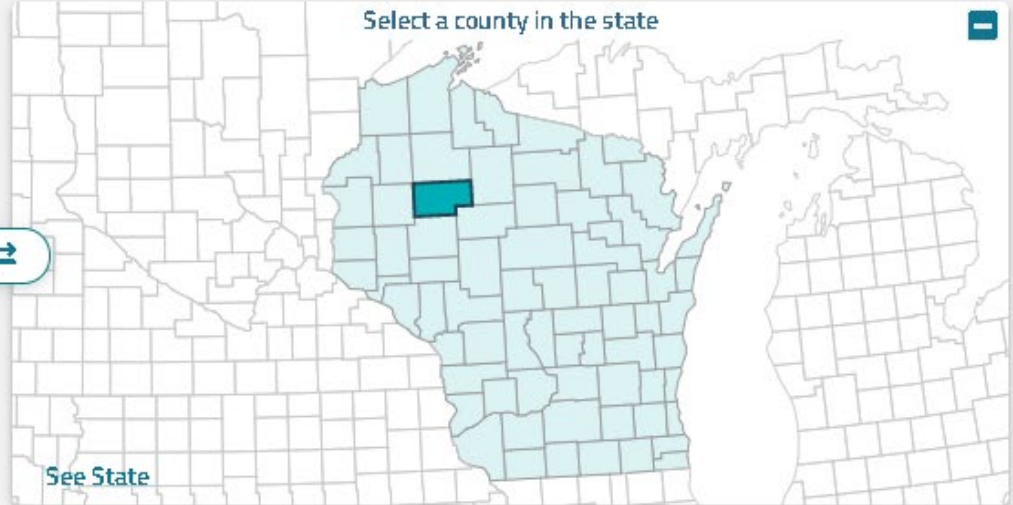
Select a county in the state



See State

Rusk County, Wisconsin

Select a county in the state



See State

Analysis of Results ⓘ

Price County, WI when compared to Rusk County, WI:

Literacy:

- Average scale score estimate has no notable difference
- Percentage at or below Level 1 has no notable difference
- Percentage at Level 2 has no notable difference
- Percentage at or above Level 3 has no notable difference

Numeracy :

- Average scale score estimate has no notable difference
- Percentage at or below Level 1 has no notable difference
- Percentage at Level 2 has no notable difference
- Percentage at or above Level 3 has no notable difference

View WI County Charts

+ Add Variables

View WI County Charts

Analysis of Results ⓘ

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Numeracy :

- Average scale score estimate has no notable difference
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- Percentage at Level 2 has no notable difference
- Percentage at or above Level 3 has no notable difference

PIAAC Skills Map Benefits

Benefits: Policy Makers

1. National level: drafting policies that are based on science and valid data.
2. State level: planning and priority-setting, decision-making, and allocation of resources.
3. Local level: comparing with state estimates or other counties as a reliable source for:
 - understanding the state of adult populations skills
 - addressing gaps in education and training

Benefits: State & County Education Organizations and Businesses

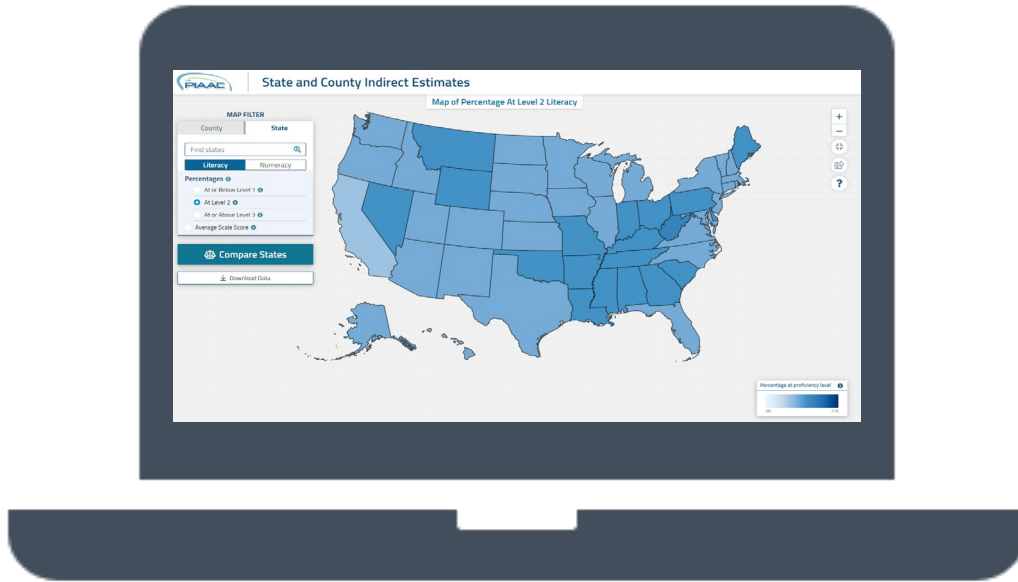
The Skills Map provides access to:

1. estimates at the three performance levels that are not available from any state or national studies and surveys;
2. additional variables for contextual information on the status of their labor force, educational attainment; and
3. information source for attracting and justifying funding needs;
4. a planning tool for organizations or companies looking for employees with certain skill sets.

Where can you find the PIAAC Skills Map and other information?

The Skills Map

- Visit nces.ed.gov/surveys/piaac/state-county-estimates.asp for more information, including:



- Tutorial video for the Skills Map;
- Summary of the higher/lower-performing states and counties; and
- FAQs.

nces.ed.gov/surveys/piaac/skillsmap

Resources on the PIAAC Gateway

- Research-to-Practice Guides: piaacgateway.com/research-to-practice-guides
- Infographics: www.piaacgateway.com/infographics
- Watch the RISE Webinar recording about the Skills Map: <https://www.air.org/event/piaac-skills-map-implications-research-policy-and-practice>
- Sign up for updates from the PIAAC Buzz: www.piaacgateway.com/the-buzz



All this and more available on the PIAAC Gateway:
www.piaacgateway.com

PIAAC Newsletter: The Buzz



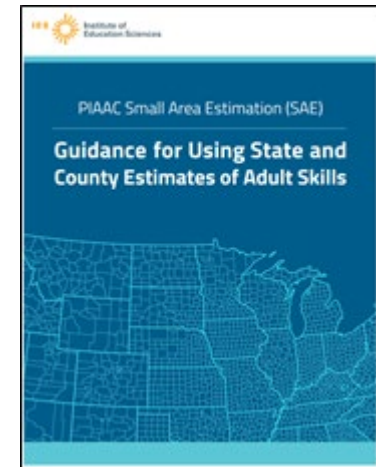
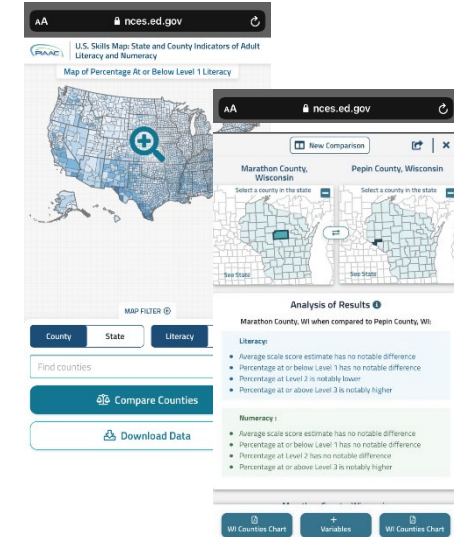
- The PIAAC Buzz is a newsletter that provides updates on the survey and how it's being used, including both U.S. and international news on PIAAC. You can sign up to receive our newsletter
- Sign up for updates from the PIAAC Buzz:
www.piaacgateway.com/the-buzz



What's new?

Skills Map Updates

- In Spring 2021, NCES released a mobile version of the U.S. PIAAC Skills Map with all capabilities available on the website.
- In Summer 2021, NCES released the PIAAC Small Area Estimation (SAE) Data User's Guide that explains the reporting practices and statistical methods that are necessary when analyzing and reporting the model-based estimates in the PIAAC Skills Map.



Upcoming PIAAC Cycle 2

The next cycle of PIAAC (Cycle 2) is currently underway in the United States

- National and international Cycle 2 PIAAC data will be collected in 2022-2023 and is scheduled to be released in 2024.
- New measures include:
 - Numeracy components: better measurement of lowest skills in numeracy;
 - Adaptive Problem solving; and
 - Financial literacy background questions (U.S. only)

Questions?

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