City Health Dashboard
DASHBOARD

City Health Dashboard
Technical Document
Part 2: State-based Education Data

Version 2: Updated July 3, 2018

Contents

Section 1: Overview

The City Health Dashboard (the Dashboard) is a one-stop resource allowing users to view and compare data from multiple sources on health and the factors that shape health to guide local solutions. Through a vigorous selection process, the City Health Dashboard selected 36 metrics spanning 5 domains—clinical care, health behaviors, health outcomes, physical environment, and social and economic factors—to quantify health, health determinants, and equity at the city level, and where available, census tract level.

Metrics are derived from both private and publicly available data sources, with some data sources contributing several metrics and others contributing only a single metric.

Document Mission

This document is written for an audience interested in the technical attributes of the state-based education metrics—high school graduation and third-grade reading proficiency—of the Dashboard. It provides details on which data sources, variables, and formulas were used to operationalize the high school graduation and third-grade reading proficiency metrics and explains the rationale for analytic decisions. It should be used in conjunction with the Technical Document Part 1, which addressed all other technical elements of the Dashboard analytics.

Users are invited to contact the Dashboard (info@cityhealthdashboard.com) with general feedback or questions not addressed below.

Note on Absenteeism

Absenteeism is an education metric; however, it comes from a national data source, Civil Rights Data Collection, rather than a state-based education data source. Please refer to the City Health Dashboard Technical Document Part 1 for the technical attributes of absenteeism, along with the other metrics available on the Dashboard.

State-based Education Data Measure Selection Criteria

By applying the measure selection criteria, the Dashboard chose to use state-based education data sources for high school graduation and third-grade reading proficiency over federally reported data sources through the U.S. Department of Education EDFacts (EDFacts). State-based education data sources are updated more regularly and provide data at a more granular level than federally reported data.

Limitations of State-based Education Data Sources

Overall, state-based education data are not reported or collected centrally. Any specific questions regarding the original data collection and reporting should be directed to the specific state departments of education. There are variations between and within states in terms of the following:

- Most recent year of data
- Data update frequency
- Education level disaggregation
- Race/ethnicity and gender subgroup disaggregation availability
- Race/ethnicity categories and definitions
- Data censorship criteria
- Definition of reading proficiency
- Data file layout and supporting documentation

The Dashboard downloaded the data from state-based education websites from August, 2017 to April, 2018; however, some states may have released more recent files during this acquisition period so there are different years of data between and within states. For states missing certain data on their website, the Dashboard made best efforts to submit data requests as allowed by the project's timeline. The Dashboard made best efforts to standardize data collection and analysis.

Data Analysis

Primary data analysis of values calculated by the Dashboard was performed by Jessica Athens, Sarah Conderino, MPH (Surveillance Data Scientist, Department of Population Health, NYU School of Medicine), and Susan Kum, PhD (Postdoctoral Fellow, Department of Population Health, NYU School of Medicine). Shauna Ford and Miriam Gofine contributed to data validation.

Updates to Technical Document

This technical document will be continuously updated as needed. Please note that the date of the last update for this document is provided on the first page of this document and on the footer of this document.

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Downloading State-based Education Data

Dashboard data, including state-based education data, is available for free download at www.cityhealthdashboard.com/data-downloads. Users should consult the Downloadable Data Codebook, also available at www.cityhealthdashboard.com/data-downloads, for more detail.

Citing Dashboard Data and Technical Document

Dashboard data:
> City Health Dashboard. *City Health Dashboard Data.* New York: City Health Dashboard; 2018. Available for download at www.cityhealthdashboard.com/data-downloads.

Technical Document:
> Wilson A, Conderino S, Kum S, Gofine M, Ford S, Levine S, Athens J. *City Health Dashboard Technical Document, Part 2*. New York: City Health Dashboard; 2018. Available for download at www.cityhealthdashboard.com/data-downloads/technical-documentation.

Feedback or Errors

Users are encouraged to contact the Dashboard with comments or questions regarding cityhealthdashboard.com and any documents available for download from it, including this Technical Document, at info@cityhealthdashboard.com.

SECTION 2: State-based Education Data Sources Analytic Decisions

Education Level Disaggregation

School districts, also known as Local Education Agencies (LEA), do not map directly to city boundaries. Thus, the Dashboard acquired data at the individual school level in order to select the schools that are physically located within the city boundaries. The provided estimates are only city-level estimates, not school district estimates. For more detailed information on the number of schools contributing to the city estimate, refer to the downloadable data.

School Inclusion

All public schools were included in analysis. This consists of regular schools (including charter and magnet schools), special education schools, vocational schools, and other/alternative schools. For definitions of these types of schools, please refer to the Glossary.

Data Censoring

Data censorship varies between and within states and may not reflect the Dashboard's policies noted in the City Health Dashboard Technical Document Part 1. For high school graduation, the Dashboard did not censor data further than what individual states already censored. For third-grade reading proficiency, the Dashboard censored when a component rate, either proficient or above, was censored by the state. For more information on data censorship of third-grade reading proficiency, please refer to Section 5B. The count of schools within each city and the number of schools contributing to each city-level estimate are available upon request at info@cityhealthdashboard.com.

Data Disclaimer

Estimates presented in the Dashboard are subject to the same limitations as those inherent in the source datasets. We identify the most likely sources of bias as necessary for each measure, but users should consult the data sources to understand potential biases more fully.

Data Rounding

All calculated values were rounded to one decimal place immediately prior to data export.

Federal Information Processing Standards (FIPS) codes

The Federal Information Processing Series (FIPS), formerly Federal Information Processing Standards, are codes for geographic entities maintained and issued by the Census Bureau. When concatenated as State-County, State-Place, or State-County-Tract, FIPS codes function as unique identifiers for geographic entities. The Census Bureau assigns codes to geographic entities such as tracts, which are not covered by FIPS.[1] Note: Census Bureau codes for tracts are referred to as Tract FIPS within the Dashboard.

Note on Honolulu, HI FIPS code
The Dashboard reports data for the 500 most populous cities in the nation as selected by the CDC's 500 Cities Project.[2] The Dashboard selected city and tract FIPS codes as census tract boundary shapefiles released by the 500 Cities Project.[3] As per the CDC 500 Cities Project,[4] the Dashboard uses the FIPS code for the county of Honolulu, Hawaii (15-003) to represent the

geographic area associated with the city of Honolulu (Urban Honolulu CDP, FIPS code 15-71550) for high school graduation and third-grade reading proficiency.

Population Percentages

Text describing population breakdowns by racial/ethnic demographic group accompanies high school graduation rate values on the Demographic Detail page. These values are not available for download; please email info@cityhealthdashboard.com for more information on their calculation.

Subgroup Categories

For high school graduation, the Dashboard acquired disaggregated state-based education data by race/ethnicity and gender when possible. Categorization of race/ethnicity groups vary between states and may not reflect the Dashboard categories. The Dashboard combined race/ethnicity groups according to the following demographic groups: Asian (Asian or Native Hawaiian or Pacific Islander (NHOPI)); Black/ African American; Hispanic/ Latino; White (not Hispanic or Latino); and Other (other race, 2 or more races, or American Indian/Alaska Native (AIAN)). For more information on the rationale behind these population groups, refer to the City Health Dashboard Technical Document Part 1. If you have any questions on how state-specific racial/ethnic categories are defined, please direct them to the individual state department of education.

Users should note that state-based estimates for Asian, Black/African American, Other, and White demographic groups are mutually exclusive with estimates for Hispanic/Latino ethnicity. Thus, individuals who identify with any of these racial groups will not contribute to counts for the Hispanic ethnicity category.

The Dashboard does not report race/ethnicity or gender disaggregated data for third-grade reading proficiency. For more information, refer to Section 5B.

Reporting Rates

High school graduation and third-grade reading proficiency rates are reported as calculated by the Dashboard staff.

Numerators, denominators, margins of error, and confidence intervals are not reported as not all state-based education data sources provided values. In addition, states vary in how they report rates—they can be reported as exact rates, approximate rates, or as a rate range. Exact rates are reported as reported by the state department of education, approximate rates (e.g. ~95%) are reported as the value (95%). Rate ranges are reported as the midpoint of the listed range: e.g., 80%-90% is reported as 85%.The type of rate is noted in the downloadable data.

Since there were not always numerators or denominators reported, the Dashboard analysts calculated weights based on grade-level enrollment for aggregating school-based rates to the city level. For more information on the relevant formulas for each metric, please refer to Section 5A and 5B.

<u>Validation</u>

The Dashboard implemented a multi-step data validation process to ensure the accuracy of (1) metric value calculation (2) data uploaded to the website display and (3) comparison to estimates based on EDFacts. As of June 29, 2018, the following steps were completed:

1. Internal data results validation

   All analyses on the Dashboard were initially calculated by a primary analyst from the City Health Dashboard analysis team. All analyses were then independently replicated by a secondary analyst within the group. Results were directly compared and if applicable, discrepancies were iteratively investigated and internally documented until the two separate analyses generated identical values.

2. The Dashboard development site data validation

   Analysts from the City Health Dashboard analysis team web-scraped data on the Dashboard's beta site in order to compare website data with the .csv datafiles sent directly to the site developers. There were no discrepancies noted.

3. Comparison to EDFacts

   Analysts calculated estimates from EDFacts-based data to compare against estimates from state-based education data sources. Where U.S. Department of Education values were less than 0.9x the state-based value or greater than 1.1x the state- based value, analysts evaluated the source of the differences. Please refer to Section 6 for more information about potential sources of difference.

SECTION 3: Extracting Data

Introduction to this Section

Data were downloaded from state departments of education (Appendix E & F). From each file, the Dashboard identified columns relevant to the metrics and created a macro that would systematically import the state data files, pulling these relevant columns to create a unified dataset. When available, the following elements were included in the macro: school names and IDs, counts for numerators, counts for denominators, rates, subgroup designation, and filtering criteria (i.e. year, subject, test, grade). Rates were reported differently by each state and were cleaned as follows:

- Midpoints were calculated from rate ranges
- Approximate rates were set to the specific value (i.e. ~95% becomes 95%)
- Rates reported in decimal format were multiplied by 100
- If rates were not reported, calculating the rate from the numerator and denominator
- If rates were reported both as a combined proficient or above rate AND as individual proficiency levels (i.e. proficient or above), the Dashboard selected the state-provided combined rate over the individual proficiency levels. If rates were only reported in individual proficiency levels, the Dashboard summed the rates for proficient or above to get an overall estimate of proficient or above. The overall rate was censored if a component rate was missing.

All analyses were performed using SAS version 9.4.

Description of File Formats

State files fell into four basic formats:
1. *Single, long file*: Rates, numerators, and denominators were found on a single tab/sheet, and if available, subgroups were designated in a single column.
2. *Single, wide file*: Rates, numerators, and denominators were found in a single tab/sheet, and data values for each subgroup were found in distinct columns.
3. *Multiple files/sheets*: Overall, demographic and gender data were found in separate files or tabs/sheets.
4. *Single column*: Rates, numerators, and denominators were all found in a single column.

For more details on the SAS code, please contact the Dashboard at info@cityhealthdashboard.com.

SECTION 4: School Geographic Mapping

Introduction to this Section

The Dashboard matched extracted data from state-based school-level education data files, utilizing the boundaries of the Centers for Disease Control and Prevention (CDC) 500 Cities Project. These individual schools were identified through geographic filtering from the following National Center for Education Statistics (NCES) data files:
- NCES 2016-17 School Directory file
- NCES 2015-16 School Directory file
- NCES Elementary/Secondary Information Systems (EISi) grade enrollment files
- NCES 2015-16 Education Demographic and Geographic Estimates (EDGE) file

The individual school estimates within a city were then aggregated to provide a city-level metric for high school graduation or third-grade reading proficiency.

All analyses were performed using SAS version 9.4 and R version 3.4.

Analyses

Data inputs
(1) NCES (Preliminary) Directory for school year 2016-17 and Directory (v.1a) for school year 2015-2016.[5,6] The flat files were downloaded from here. The following fields were selected from the NCES Directories:
    a. SCH_NAME (school name)
    b. ST_SCHID (state school ID)
    c. SY_STATUS_TEXT (school year status)
    d. EFFECTIVE_DATE (date of school status)
    e. NCESSCH (NCES school ID)
(2) Data file containing information about grades from NCES EISi was downloaded from here. Data file created using the tableGenerator for the 2015-16 school year (most recent available in the system).[7] The following fields were use:
    a. NCESSCH
    b. School Type [Public School] 2015-16: "1-Regular school", "2-Special education school", "3-Vocational school", "4-Alternative/other school"
    c. Grade 3 offered [Public School] 2015-16: "1-Yes", "2-No"
    d. Grade 12 offered [Public School] 2015-16: "1-Yes", "2-No"
(3) Public schools for school year 2015-16 shapefile (points) from NCES EDGE.[8] The file was downloaded from here.
(4) City boundaries shapefile (polygons) from the CDC 500 Cities Project.[3] The file was downloaded from here.
(5) Output from macro (Refer to Section 3)

Spatial join
(6) The spatial projection of the public schools shapefile was transformed to match the projection of the city boundaries shapefile (using sp::spTransform in R).
(7) A spatial join was performed between the re-projected EDGE public schools shapefile and the city boundaries shapefile (using raster::intersect in R). The result of the spatial join is public schools within city boundaries of the CDC 500 Cities Project. The spatial join may have not captured some schools that are considered to be schools in a given city because the point location of the school falls outside the city boundaries.

Data matching
   (8) The files of directories (2016-17 and 2015-16) containing state school IDs, file with school grades information, and the spatial join result were merged using a common field, NCESSCH (NCES school ID). Issues, notably incomplete state school IDs, required the use of both 2015-2016 and 2016-2017 directories.
   (9) IDs based on state specified IDs were constructed to match state-specific files containing school-level estimates with NCES data files. The NCES records state school IDs as the combination of the state agency ID and the state school ID. String matching was performed for states where state ID was not specified in state files.

String matching
   (10)   The Dashboard used string matching for state files that did not have school IDs. The Dashboard cleaned school names and matched them to NCES data through the SAS procedure COMPGED. For schools that did not have an exact match, the top five matches were manually reviewed to determine true and false matches.
   (11)   For third-grade reading proficiency, there were 8 states (AK, LA, MS, ND, NY, UT, VA, WY) for which there were duplicate match results for school names that were not unique. For those school names, the Dashboard used state school directories or other files to identify which of the duplicate school names are located in the CDC 500 Cities Project boundaries.

School Geographic Mapping for Absenteeism

The Civil Rights Data Collection data source for absenteeism also provided school-level data. The Dashboard uses the same school geographic mapping methodology to select the individual schools within the CDC 500 Cities Project boundaries for absenteeism. However, for more details on the rest of the analyses for absenteeism, please refer to the Technical Document Part 1.

For more details on the SAS and R code, please contact the Dashboard at info@cityhealthdashboard.com.

SECTION 5: Metric Calculation

Introduction to this Section

This section is organized by metric, with notes on elements specific to the high school graduation and third-grade reading proficiency metrics.

All analyses were performed using SAS version 9.4.

A. High School Graduation

High school graduation: General notes
The high school graduation metric was calculated using state-based education data sources. These data were downloaded from August, 2017-April, 2018. The Dashboard defines high school graduation as the percent of students who graduate high school within 4 years of entering ninth grade. This is commonly referred to as the Four Year Adjusted Cohort Graduation Rate. The formula is presented here:

$$\text{High school graduation} = \frac{[\text{Total students who graduate 4 years after entering 9th grade}]}{\text{Total 9th grade cohort}} \times 100\%$$

If you have any questions regarding the Four Year Adjusted Cohort Graduation Rate, please direct them to the individual state department of education.

High school graduation: Weights
Since there were not always numerators or denominators reported, the Dashboard analysts calculated weights based on grade-level enrollment for aggregating school-based rates to the city level. Analysts used twelfth grade school enrollment data from NCES ElSi to create weights for the school and student racial/ethnic and gender subgroups in order to provide a city estimate for high school graduation. The output from our geographic analysis was used to select which schools to include (see Section 4). Weights were created for all (students), female, male, White, Black, Hispanic, Asian (e.g. Asian/Pacific Islander, Native Hawaiian/Pacific Islander), and Other (e.g. American Indian/Alaska Native, Two or More Races). Weights were adjusted to account for schools that did not report their graduation rate data. For more detail on the formulas, please refer to the *High school graduation: Analysis* section.

Additionally, both California and Hawaii provided estimates for Filipino subgroups. These estimates were incorporated into the Asian category for California.

High school graduation: Categorizing subgroups
Please refer to Section 2 for race/ethnicity categories used for high school graduation. Some states reported different disaggregations of the Asian/Pacific Islander and Other categories. In these instances, these groups were combined to report an overall Asian/Pacific Islander and Other rate.
Not all states provided subgroup disaggregation. For more detail on which states provide subgroup disaggregation, please refer to Appendix B.

High school graduation: Data censoring
State-based education data adhere to the state's data censoring criteria. Specific criteria for data censoring can also vary within a state as well, with high school graduation and third-grade

reading proficiency metrics having different criteria. For more detail on individual state's data censoring criteria, please refer to Appendix A.

High school graduation: Analysis
The Dashboard multiplied school and subgroup specific graduation rates by the corresponding weight and summed all schools within the given city and subgroup (see below). These city-level rates were then adjusted by dividing them by the weight adjustments, the sum of weights for all schools that did not censor their graduation data for the given subgroup.

Relevant formulas are presented here for users' reference:

$$\text{High School Graduation Weight}_i = \frac{\text{Total population for school}_i \text{ in grade 12}}{\text{Total population for all schools in city}}$$

Where total student population of the grade or a subgroup in twelfth grade for a school is the numerator; total student population (of the grade or subgroup) for all schools in city is the denominator; weight$_i$ is the derived proportion

$$\text{High School Graduation Unadjusted City Rate} = \sum_{i=1}^{n} (\text{Rate}_i * \text{Weight}_i)$$

Where rate$_i$ is the high school graduation rate of an individual school; where weight$_i$ is the weight of that individual school; where unadjusted city rate is the derived city high school graduation estimate from multiplying rate$_i$ and weight$_i$ for an individual school and summing it for all schools in the city

$$\text{Weight Adjustment} = \sum_{i=1}^{n} (\text{Weight}_i)$$

Where the weight adjustment is calculated as the sum of weights for all schools that did not censor their graduation data for the given subgroup

$$\text{High School Graduation Adjusted City Rate} = \frac{\sum_{i=1}^{n} (\text{Rate}_i * \text{Weight}_i)}{\text{Weight Adjustment}}$$

Where rate$_i$ is the high school graduation rate of an individual school; where weight$_i$ is the weight of that individual school; where rate$_i$ multiplied by weight$_i$ is the numerator; where weight adjustment is the denominator; where the adjusted city high school graduation rate is the derived estimate from summing the proportion for all schools in the city

High school graduation: Indicators
Rate Indicator:
The Dashboard created the following indicator (variable educ_indicator), available in the Dashboard data download, to provide more information on what type of rate was utilized for all reported high school graduation values.

    educ_indicator=1: All school estimates are a rate
    educ_indicator=2: At least one school estimate is an approximate rate
    educ_indicator=3: At least one school estimate is a midpoint of a rate range

County Indicator:
County-level data is used where city-level data is unavailable/censored as outlined in Section 2: *Federal Informational Processing Standards (FIPS) codes.* The Dashboard created the following

indicator (variable county_indicator), available in the Dashboard data download, to indicate which geography was utilized for all reported values:

> county_indicator=0: Estimate is calculated from city-specific values
> county_indicator=1: Estimate is calculated from an average of component counties' values (i.e. city falls under one or more counties)
> county_indicator=2: Estimate is calculated from its single corresponding county values (i.e. city falls under on specific county)

The Dashboard indicates when county data is displayed on a page (i.e., where county_indicator=1 or county_indicator=2) under the "Tips and Cautions for Using the Data" sub-header.

High school graduation: State-specific notes
There are nuances to each state's data for high school graduation.

- For Maryland, the race/ethnicity subgroup disaggregation comes from the city of Baltimore's data sources specifically, not from the state's department of education.
- For California, enrollment data are from the state department of education, not from NCES ElSi.
- For the District of Columbia, the Dashboard used district level data as all schools fall within district boundaries, rendering the spatial join unnecessary.

For more detail on the data sources, method of data acquisition, year of data, month of acquisition, and specific notes, please refer to Appendix C & E.

B. Third-grade Reading Proficiency

Third-grade reading proficiency: General notes
The third-grade reading proficiency metric was calculated using state-based education data sources. These data were downloaded from August, 2017-April, 2018. The Dashboard defines third-grade reading proficiency as the percent of third-graders who score "proficient" or above in reading on standardized tests. The formula is presented here:

3rd-grade reading proficiency=

$$\frac{\text{Total 3rd-graders who score proficient or above on reading test]}}{\text{Total 3rd-graders who were tested}} \times 100\%$$

Third-grade reading proficiency tests are different in every state, with different definitions of proficiency and different skills tested. In general, achieving a score of "proficient" or above implies that students have satisfactorily achieved the grade-level reading standard, adequately preparing them to advance to the next grade. The reading proficiency test scores do not include scores from alternative reading proficiency tests (for third-graders in specialized education programs). If you have any questions regarding third-grade reading proficiency tests, please direct them to the individual state department of education.

Third-grade reading proficiency: Weights
Since there were not always numerators or denominators reported, the Dashboard analysts calculated weights based on grade-level enrollment for aggregating school-based rates to the city level. The Dashboard used third-grade school enrollment data from NCES ElSi to create weights for the school and student subgroups in order to provide a city estimate for third grade reading proficiency. The output from our geographic analysis was used to select which schools to include (see Section 4). Weights were adjusted to account for schools that did not report or censored their third-grade reading proficiency rate data. For more detail on the formulas, please refer to the *Third-grade reading proficiency: Analysis section*.

Third-grade reading proficiency: Categorizing subgroups
The Dashboard did not report race/ethnicity or gender disaggregation for third-grade reading proficiency. There was substantial state censorship of subgroups, especially in race/ethnicity groups, at the school level. As a result, there were not enough subgroup disaggregated data for the majority of the 500 cities.

Third-grade reading proficiency: Data censoring
The Dashboard selected the state-provided combined rate over the individual proficiency levels if rates were reported both as a combined proficient or above rate AND as individual proficiency levels (i.e. proficient or above). This was done to reduce missingness from state censorship in individual proficiency levels, and was applied to the District of Columbia and the 32 states that provided a combined proficient or above rate. The remaining 19 states reported rates as individual proficiency levels. For those states, the Dashboard summed the rates for proficient or above to get an overall estimate of proficient or above. The overall rate was censored if a component rate was missing. For more detail on which states provided a combined proficient or above rate, please refer to Appendix D.

State-based education data adhere to the state's data censoring criteria. Specific criteria for data censoring can also vary within a state as well, with high school graduation and third-grade reading proficiency metrics having different criteria. For more detail on data censoring criteria by state, please refer to Appendix A.

Third-grade reading proficiency: Analysis
The Dashboard multiplied school specific third-grade reading proficiency rates by the corresponding weight and summed all schools within the given city (see below). These city-level rates were then adjusted by dividing them by the weight adjustments, the sum of weights for all schools that did not censor their reading proficiency data.

Relevant formulas are presented here for users' reference:

$$\text{Third-grade Reading Proficiency Weight}_i = \frac{\text{Total population for school}_i \text{ in grade 3}}{\text{Total population for all schools in city}}$$

Where total student population of the grade in third grade for a school is the numerator; total student population of the grade for all schools in city is the denominator; weight_i is the derived proportion

$$\text{Third-grade Reading Proficiency Unadjusted City Rate} = \sum_{i=1}^{n} (\text{Rate}_i * \text{Weight}_i)$$

Where rate_i is the third-grade reading proficiency rate of an individual school; where weight_i is the weight of that individual school; where unadjusted city rate is the derived city third-grade reading proficiency estimate from multiplying rate_i and weight_i for an individual school and summing it for all schools in the city

$$\text{Weight Adjustment} = \sum_{i=1}^{n} (\text{Weight}_i)$$

Where the weight adjustment is calculated as the sum of weights for all schools that did not censor their third-grade reading proficiency data

$$\text{Third-grade Reading Proficiency Adjusted City Rate} = \frac{\sum_{i=1}^{n} (\text{Rate}_i * \text{Weight}_i)}{\text{Weight Adjustment}}$$

Where rate_i is the third-grade reading proficiency rate of an individual school; where weight_i is the weight of that individual school; where rate_i multiplied by weight_i is the numerator; where weight adjustment is the denominator; where the adjusted city third-grade reading proficiency rate is the derived estimate from summing the proportion for all schools in the city

Third-grade reading proficiency: Indicators

Rate Indicator:
The Dashboard created the following indicator, available in the Dashboard data download, to provide more information on what type of rate was utilized for all reported third-grade reading proficiency values.
>   1= All school estimates are a rate
>   2= At least one school estimate is an approximate rate

County Indicator:
County-level data is used where city-level data is unavailable/censored as outlined in Section 2: *Federal Informational Processing Standards (FIPS) codes.* The Dashboard created the following indicator (variable county_indicator), available in the Dashboard data download, to indicate which geography was utilized for all reported values:

> county_indicator=0: Estimate is calculated from city-specific values
> county_indicator=1: Estimate is calculated from an average of component counties' values (i.e. city falls under one or more counties)
> county_indicator=2: Estimate is calculated from its single corresponding county values (i.e. city falls under on specific county)

The Dashboard indicates when county data is displayed on a page (i.e., where county_indicator=1 or county_indicator=2) under the "Tips and Cautions for Using the Data" sub-header.

Third-grade reading proficiency: State-specific notes
There are nuances to each state's data for third-grade reading proficiency.

- For Massachusetts, the state is currently transitioning between two different reading proficiency tests (MCAS and Next Generation MCAS). Thus, some of the schools in the Dashboard's Massachusetts cities are taking one test, while others are taking the other test. The Dashboard chose to analyze assessment results from the Next Generation MCAS.
- For Virginia, elementary school reading proficiency scores are not disaggregated by grade level, thus any reading proficiency values for Virginian cities are elementary school values.
- For California, the enrollment data are from the state department of education, not from NCES ElSi.
- For the District of Columbia, the Dashboard used district level data as all schools fall within district boundaries, rendering the spatial join unnecessary.

For more detail on the data sources, method of data acquisition, year of data, month of acquisition, and specific notes, please refer to Appendix D & F.

SECTION 6: Comparison to EDFacts Data

The Dashboard spearheaded a novel approach to analyzing state-based education data at the city level. Given the discrepancies between states in the ways education data were collected and presented, the Dashboard had to make certain analytic decisions that may cause differences between reported 2014-15 EDFacts data on high school graduation and third-grade reading proficiency and the presented Dashboard estimates.[9-11] In particular, the Dashboard believes that the following decisions may have contributed to the differences in estimates:

- The Dashboard's enrollment weighting methodology
  - As numerators and denominators were not always reported by the states, the Dashboard created weights through grade enrollment in order to aggregate school-level rates to a city-level rate.

- Different years of data
  - The EDFacts data are from 2014-2015. However, states report different years of data, ranging from 2014-15 to 2016-17. This may affect third-grade reading proficiency in particular as states may have switched the reading proficiency test administered in more recent academic years.

- School-level suppression
  - States have different data censorship criteria, and some subgroup or school data were often censored.

- School type
  - The Dashboard included all school types in the analyses; however, it is unclear if all types are included in the EDFacts estimates.

- Racial/ethnicity definitions
  - States may have different race/ethnicity definitions, and these definitions may not be consistent with the EDFacts definition.

- School district boundaries versus city boundaries
  - EDFacts data were at the school district level. Since school districts do not always align with city boundaries, it was essential to identify individual schools that fall within city boundaries and aggregate up to calculate a city estimate.

The Dashboard welcomes any feedback, questions, or suggestions on the analytical decisions or other potential sources of difference that may have been overlooked throughout this process of analyzing high school graduation and third-grade reading proficiency. Users are encouraged to email us at info@cityhealthdashboard.com.

SECTION 7: Acknowledgements

The Dashboard acknowledges Rania Kanchi, Alexis Feinberg, and Priscilla Lopez for their significant contributions to the pilot Dashboard site and analyses.

SECTION 8: References

1.   Geographic Terms and Concepts – Codes for Geographic Entities U.S. Census Bureau; https://www.census.gov/geo/reference/gtc/gtc_codes.html#fips. Accessed January 24, 2018.
2.   Centers for Disease Control and Prevention. About the Project - 500 Cities: Local Data for Better Health. 2018; https://www.cdc.gov/500cities/about.htm. Accessed April 10, 2018.
3.   500 Cities: Local Data for Better Health. 500 Cities: Local Data for Better Health Census Tract Boundaries (Last Update Date: December 4, 2017). 2017; https://chronicdata.cdc.gov/500-Cities/500-Cities-City-Boundaries/n44h-hy2j. Accessed December 4, 2017.
4.   500 Cities: Local Data for Better Health. Local Data for Better Health, 2017 Release. 2017; https://chronicdata.cdc.gov/500-Cities/500-Cities-Local-Data-for-Better-Health-2017-relea/6vp6-wxuq. Accessed September 27, 2017.
5.   National Center for Education Statistics Public Elementary/Secondary School Universe Survey Data. Preliminary directory. 2016-17; https://nces.ed.gov/ccd/pubschuniv.asp. Accessed February, 2018.
6.   National Center for Education Statistics Public Elementary/Secondary School Universe Survey Data. Directory (v.1a). 2015-16; https://nces.ed.gov/ccd/pubschuniv.asp. Accessed February, 2018.
7.   National Center for Education Statistics Elementary/Secondary Information System (ElSi). tableGenerator. 2015-16; https://nces.ed.gov/ccd/elsi/. Accessed February, 2018.
8.   National Center for Education Statistics Education Demographic and Geographic Estimates. Public Schools & School Districts: School Data. 2015-16; https://nces.ed.gov/programs/edge/Geographic/SchoolLocations. Accessed February, 2018.
9.   U.S. Department of Education EDFacts. SY 2014-15 Achievement Results for State Assessments in Reading/ Language Arts: LEA Level. 2014-15; https://www2.ed.gov/about/inits/ed/edfacts/data-files/index.html. Accessed April, 2018.
10.   U.S. Department of Education EDFacts. SY 2014-15 Adjusted Cohort Graduation Rate: LEA Level. 2014-15; https://www2.ed.gov/about/inits/ed/edfacts/data-files/index.html#acgr. Accessed April, 2018.
11.   U.S. Department of Education EDFacts. SY 2014-15 Adjusted Cohort Graduation Rate: School Level. 2014-15; https://www2.ed.gov/about/inits/ed/edfacts/data-files/index.html#acgr. Accessed April, 2018.
12.   National Center for Education Statistics IPEDS 2017-18 Data Collection System. 2017-18 Survey Materials: Glossary. 2018; https://surveys.nces.ed.gov/ipeds/Downloads/Forms/IPEDSGlossary.pdf. Accessed March, 2018.
13.   U.S. Department of Education. Definitions. 2018; https://www.ed.gov/race-top/district-competition/definitions. Accessed March, 2018.
14.   National Center for Education Statistics. CCD School and District Glossary. 2018; https://nces.ed.gov/ccd/commonfiles/glossary.asp. Accessed March, 2018.

SECTION 9: Appendices

Appendix A: Data Censorship Rules by State

State	High School Graduation Data Censorship	Third-grade Reading Proficiency Data Censorship	State	High School Graduation Data Censorship	Third-grade Reading Proficiency Data Censorship	State	High School Graduation Data Censorship	Third-grade Reading Proficiency Data Censorship
Alabama	Censorship: N<11 Range: Percentage ≥95%	Censorship: N<11 Range: Percentage ≥95% Percentages <1%	Kentucky	Censorship: N<10	Censorship: N<10	North Dakota	Censorship: N<10	Censorship: N<10
Alaska	Does not censor	Censorship: N<6 Range: Percentages may be reported in ranges	Louisiana	Range: Percentages > 95% Percentages < 5%	Censorship: N<10 Range: Percentages ≤1%	Ohio	Censorship: N<10	Censorship: N<10
Arizona	Censorship: N<11	Censorship: N<11 Range: Percentages >98% Percentages <2%	Maine	Censorship: N<10	Censorship: N<5	Oklahoma	Censorship: N<10 Range: Percentages >95% Percentages < 5%	Censorship: N<10 Range: Percentages >95% Percentages < 5%
Arkansas	Censorship: N<10	Censorship: N≤10	Maryland	Censorship: N<10 Range: Percentages≥95% Percentages ≤5	Censorship: N<10 Range: Percentages ≤5 Percentages≥95%	Oregon	Censorship: Cohort N<40	Censorship: N<6 Range: Percentages>95% Percentages< 5%
California	Censorship: N<11	Censorship: N<11	Massachusetts	Censorship: N<6	Censorship: N<10	Pennsylvania	Censorship: N<11	Censorship: N<11
Colorado	Censorship: N<16	Censorship: N<16	Michigan	Censorship: N<10 Range: Percentages >95% Percentages < 5%	Censorship: N<10 Range: Percentages < 5% Percentages >95%	Rhode Island	Censorship: N<10 Range: Percentages <1%	Censorship: N<10
Connecticut	Censorship: N<6 Range: Percentages>95% Percentages<5%	Censorship: N<6 Range: Percentages>95% Percentages<5%	Minnesota	Censorship: N <10	Censorship: N<10	South Carolina	Censorship: N<10	Censorship: N<10
Delaware	Censorship: N<15 Range: Percentages>95% Percentages<5%	Censorship: N<15 Range: Percentages>95% Percentages<5%	Mississippi	Censorship: N<10 Range: Percentages <5% Percentages >95%	Censorship: N<10 Range: Percentages < 5% Percentages >95%	South Dakota	Censorship: N<10	Censorship:
District of Columbia	Censorship: N<25 Some subgroups above the minimum n-size of 25 are not reported	Censorship: N<10	Missouri	Censorship: N<30	Censorship: N<30	Tennessee	Censorship: N<10	Censorship: N<10 Range: Percentages≥99% Percentages <1%
Florida	Censorship: N<10	Censorship: N<10	Montana	Censorship: N<5	Censorship: N<5	Texas	Censorship: N<5	Censorship: N<5

Georgia	Censorship: N<15	Censorship: N<15	**Nebraska**	Censorship: N< 10 in a group. N<5 students at a performance level. All students were reported in a single group or performance category.	Censorship: N< 10 in a group. N<5 students at a performance level.	**Utah**	Censorship: N<10	Censorship: N<10
Hawaii	Censorship: N<10	Censorship: N<10	**Nevada**	Censorship: N<10	Censorship: N<10	**Vermont**	Censorship: N<11	Censorship: N<11
Idaho	Censorship: N< 5 Total of one or more cells of categorical data is less than 5 of the total student population At least two cells to be redacted in most cases where any total is available, in order to prevent any cell required for redaction to be derived.	Censorship: N<10	**New Hampshire**	Censorship: Cohort N<40	Censorship: N<11	**Virginia**	Censorship: N<10	Censorship: N<10
Illinois	Censorship: N<10	Censorship: N<10	**New Jersey**	Censorship: Cohort N<31	Censorship: N<11	**Washington**	Censorship: N<10 Range: Percentages>95%	Censorship: N<10 Range: Percentages>95%
Indiana	Censorship: N<10	Censorship: N<10	**New Mexico**	Censorship: N<10	Censorship: N<10 Range: Percentages may be reported in ranges	**West Virginia**	Censorship: N<10	Censorship: N<10
Iowa	Censorship: N<10	Censorship: N<10	**New York**	Censorship: N<5	Censorship: N<5	**Wisconsin**	Censorship: N<20	Censorship: N<20
Kansas	Censorship: N<10	Censorship: N<10	**North Carolina**	Censorship: N<10 Range: Percentages > 95% Percentages <5%	Censorship: N<10 Range: Percentages > 95% Percentages <5%	**Wyoming**	Does not censor	Censorship: N<5 Range: Percentages <5% Percentages>95%

Appendix B: Subgroups Reported by State for High School Graduation

State	High school graduation subgroup disaggregation	State	High school graduation subgroup disaggregation	State	High school graduation subgroup disaggregation
Alabama	Race/ethnicity	Kentucky	Race/ethnicity; Gender	North Dakota	Race/ethnicity; Gender
Alaska	Race/ethnicity; Gender	Louisiana	None	Ohio	Race/ethnicity; Gender
Arizona	Race/ethnicity; Gender	Maine	None	Oklahoma	Race/ethnicity
Arkansas	Race/ethnicity	Maryland	Race/ethnicity; Gender	Oregon	Race/ethnicity; Gender
California	Race/ethnicity; Gender	Massachusetts	Race/ethnicity; Gender	Pennsylvania	Race/ethnicity; Gender
Colorado	Race/ethnicity; Gender	Michigan	Race/ethnicity; Gender	Rhode Island	Race/ethnicity; Gender
Connecticut	Race/ethnicity; Gender	Minnesota	Race/ethnicity; Gender	South Carolina	Race/ethnicity; Gender
Delaware	Race/ethnicity; Gender	Mississippi	None	South Dakota	Race/ethnicity; Gender
District of Columbia	Race/ethnicity; Gender	Missouri	Race/ethnicity	Tennessee	Race/ethnicity
Florida	Race/ethnicity; Gender	Montana	Race/ethnicity; Gender	Texas	Race/ethnicity; Gender
Georgia	Race/ethnicity; Gender	Nebraska	Race/ethnicity; Gender	Utah	Race/ethnicity
Hawaii	Race/ethnicity	Nevada	Race/ethnicity; Gender	Vermont	Race/ethnicity; Gender
Idaho	Race/ethnicity; Gender	New Hampshire	None	Virginia	Race/ethnicity; Gender
Illinois	Race/ethnicity; Gender	New Jersey	Race/ethnicity	Washington	Race/ethnicity; Gender
Indiana	Race/ethnicity; Gender	New Mexico	Race/ethnicity; Gender	West Virginia	Race/ethnicity; Gender
Iowa	Race/ethnicity; Gender	New York	Race/ethnicity; Gender	Wisconsin	Race/ethnicity; Gender
Kansas	Race/ethnicity; Gender	North Carolina	Race/ethnicity; Gender	Wyoming	Race/ethnicity; Gender

Appendix C: High School Graduation Data by State

State	Data Year	State	Data Year	State	Data Year
Alabama	2015-2016	Kentucky	2015-2016	North Dakota	2015-2016
Alaska	2016-2017	Louisiana	2015-2016	Ohio	2015-2016
Arizona	2014-2015	Maine	2014-2015	Oklahoma	2014-2015
Arkansas	2015-2016	Maryland	2015-2016	Oregon	2015-2016
California	2015-2016	Massachusetts	2015-2016	Pennsylvania	2015-2016
Colorado	2015-2016	Michigan	2015-2016	Rhode Island	2015-2016
Connecticut	2015-2016	Minnesota	2015-2016	South Carolina	2015-2016
Delaware	2014-2015	Mississippi	2015-2016	South Dakota	2015-2016
District of Columbia*	2016-2017	Missouri	2015-2016	Tennessee	2016-2017
Florida	2016-2017	Montana	2015-2016	Texas	2015-2016
Georgia	2016-2017	Nebraska	2015-2016	Utah	2015-2016
Hawaii	2016-2017	Nevada	2015-2016	Vermont	2015-2016
Idaho	2015-2016	New Hampshire	2015-2016	Virginia	2015-2016
Illinois	2015-2016	New Jersey	2015-2016	Washington	2015-2016
Indiana	2015-2016	New Mexico	2015-2016	West Virginia	2015-2016
Iowa	2015-2016	New York	2016-2017	Wisconsin	2015-2016
Kansas	2016-2017	North Carolina	2015-2016	Wyoming	2015-2016

*Using district values

Appendix D: Third-grade Reading Proficiency by State

State	Reading Proficiency Test	Data Year	Notes	State	Reading Proficiency Test	Data Year	Notes
Alabama	ACT Aspire	2015-2016		**Montana**	SBA	2016-2017	Using combined rate
Alaska	PEAKS	2016-2017	Using combined rate	**Nebraska**	NeSA	2016-2017	
Arizona	AzMERIT	2015-2016		**Nevada**	CRT/SBA	2016-2017	Using combined rate
Arkansas	ACT Aspire	2016-2017	Using combined rate	**New Hampshire**	SBA	2016-2017	
California	CAASP/SBA	2015-2016	Using combined rate	**New Jersey**	PARCC	2015-2016	
Colorado	CMAS/PARCC	2016-2017	Using combined rate	**New Mexico**	PARCC	2016-2017	Using combined rate
Connecticut	SBA	2015-2016	Using combined rate	**New York**	Engage NY	2016-2017	Using combined rate
Delaware	DE SBA	2014-2015	Using combined rate	**North Carolina**	North Carolina End of Grade (EOG) Assessment	2015-2016	Using combined rate
District of Columbia	DC PARCC	2015-2016	Using district values Using combined rate	**North Dakota**	SBA	2015-2016	
Florida	FSA	2016-2017	Using combined rate	**Ohio**	Ohio State Test	2016-2017	Using combined rate
Georgia	Georgia Milestones End of Grade (EOG) Assessments	2016-2017		**Oklahoma**	OSTP	2015-2016	
Hawaii	SBA	2016-2017	Using combined rate	**Oregon**	SBA	2015-2016	Using combined rate
Idaho	ID SBA	2015-2016		**Pennsylvania**	PSSA	2015-2016	
Illinois	PARCC	2015-2016		**Rhode Island**	PARCC	2016-2017	Using combined rate
Indiana	ISTEP+	2016-2017	Using combined rate	**South Carolina**	SC Ready	2016-2017	Using combined rate
Iowa	IA Assessment	2015-2016		**South Dakota**	SBA	2015-2016	
Kansas	KSA	2016-2017		**Tennessee**	TN Ready	2014-2015	Using combined rate
Kentucky	KPREP	2015-2016	Using combined rate	**Texas**	STAAR	2015-2016	Using combined rate
Louisiana	LEAP	2016-2017		**Utah**	SAGE	2015-2016	Using combined rate
Maine	eMPowerME	2016-2017	Using combined rate	**Vermont**	SBA	2016-2017	Using combined rate
Maryland	PARCC	2015-2016		**Virginia**	SOL	2016-2017	Only provides an elementary school reading proficiency value, not disaggregated by grade. Using combined rate
Massachusetts	Next Generation MCAS	2016-2017	MA is transitioning between MCAS to Next Generation MCAS and not all schools are taking the same test. Using combined rate	**Washington**	SBA	2015-2016	Using combined rate
Michigan	M-STEP	2015-2016	Using combined rate	**West Virginia**	WVGSA	2016-2017	Using combined rate
Minnesota	MCA-III	2016-2017		**Wisconsin**	Wisconsin Forward Exam	2016-2017	Using combined rate
Mississippi	MAAP	2016-2017		**Wyoming**	PAWS	2016-2017	Using combined rate
Missouri	MAP	2015-2016					

Appendix E: High School Graduation Data Sources

State	Author	Method of Acquisition	Hyperlink (Active as of April 23, 2018)	Click-through	Month of Acquisition	State	Author	Method of Acquisition	Hyperlink (Active as of April 23, 2018)	Click-through	Month of Acquisition
Alabama	Alabama State Department of Education	Download	http://www.alsde.edu/dept/data/Pages/graduationrate-all.aspx		August, 2017	Montana	Montana Office of Public Instruction	Data request			December, 2017
Alaska	Alaska Department of Education & Early Development	Data request			December, 2017	Nebraska	Nebraska Department of Education	Download	http://nep.education.ne.gov/Links		August, 2017
Arizona	Arizona Department of Education	Download	http://www.azed.gov/accountability-research/data/	Select "Graduation Rates" tab	August, 2017	Nevada	State of Nevada Department of Education	Download	http://nevadareportcard.com/di/main/cohort	Select Schools. Select all districts and schools under the "Available" table and move to the "Selected" table.	September, 2017
Arkansas	Arkansas Department of Education	Download	http://www.arkansased.gov/divisions/public-school-accountability/school-performance/graduation-rate	Under "Related Files"	August, 2017	New Hampshire	New Hampshire Department of Education	Download	https://www.education.nh.gov/data/dropouts.htm#grads		September, 2017
California	California Department of Education	Download	High school graduation: https://www.cde.ca.gov/ds/sd/sd/filescohort.asp Enrollment:https://www.cde.ca.gov/ds/sd/sd/filesenr.asp		High school graduation: December, 2017 Enrollment: March, 2018	New Jersey	State of New Jersey Department of Education	Download	http://www.state.nj.us/education/data/grate/2016/		August, 2017
Colorado	Colorado Department of Education	Download	https://www.cde.state.co.us/cdereval/1516gradrates		August, 2017	New Mexico	New Mexico Public Education Department	Download	https://webnew.ped.state.nm.us/bureaus/accountability/graduation/		August, 2017
Connecticut	Connecticut State Department of Education	Download	http://edsight.ct.gov/SASPortal/main.do	Select "Graduation Rates" under "Performance"	All students: August, 2017 Disaggregation: December, 2017	New York	New York State Education Department	Download	https://data.nysed.gov/downloads.php	Select "Graduation Rate Database"	March, 2018
Delaware	Delaware Department of Education	Download	https://data.delaware.gov/Education/Student-Preparation/45sw-ai9e		November, 2017	North Carolina	Public Schools of North Carolina	Download	http://www.ncpublicschools.org/accountability/reporting/cohortgradrate	Select "Longitudinal 4-year Cohort Graduation Rates: 2006 through 2017" under "Additional Information"	September, 2017
District of Columbia	Office of the State Superintendent of Education	Download	https://osse.dc.gov/publication/2016-17-adjusted-cohort-graduation-rate		December, 2017	North Dakota	North Dakota Department of Public Instruction	Download	https://insights.nd.gov/Education/State/	Select "Graduation Rate" under "Academic Progress"	September, 2017
Florida	Florida Department of Education	Download	http://www.fldoe.org/accountability/data-sys/edw/	Select "Florida PK-20 Education Information Portal" on left sidebar-> Select "PK-12 Public Schools"-> Select "High School Graduation Rates" under "Students"->	February, 2018	Ohio	Ohio Department of Education	Download	http://reportcard.education.ohio.gov/Pages/Download-Data.aspx	All students: Select year-> select "School Building Data"-> select "Building Graduation Rates." Disaggregation: Select year-> select "Disaggregated	All students: August, 2017 Disaggregation: December, 2017

State	Source	Method	URL	Notes	Date	State	Source	Method	URL	Notes	Date
				Select "Build Your Own Table"						School Data" -> select "Building Disaggregated Gender & Race/ethnicity"	
Georgia	The Governor's Office of Student Achievement	Download	https://gosa.georgia.gov/downloadable-data		December, 2017	Oklahoma	Oklahoma State Department of Education	Download	http://sde.ok.gov/sde/documents/2015-09-25/oklahoma-public-school-graduation-rates	Select "School and District Grad Rates"	December, 2017
Hawaii	Hawaii State Department of Education	Download	http://www.hawaiipublicschools.org/VisionForSuccess/AdvancingEducation/StriveHIPerformanceSystem/Pages/2016-17-results.aspx	Select "The Strive HI Master Data File" under "2016-17 Reports"	December, 2017	Oregon	Oregon.gov	Download	http://www.oregon.gov/ode/reports-and-data/students/Pages/Cohort-Graduation-Rate.aspx		September, 2017
Idaho	Idaho State Department of Education	Data request			December, 2017	Pennsylvania	Pennsylvania Department of Education	Download	http://www.education.pa.gov/Data-and-Statistics/Pages/Cohort-Graduation-Rate-.aspx#tab-1		August, 2017
Illinois	Illinois State Board of Education	Download	https://www.isbe.net/Pages/Illinois-State-Report-Card-Data.aspx	Select "2015-2016 Report Card Data"	February, 2018	Rhode Island	Rhode Island Department of Education	Download	https://www.eride.ri.gov/FileExchange/fredDetails.aspx?fileID=37296&download=no		January, 2018
Indiana	Indiana Department of Education	Download	https://www.doe.in.gov/accountability/find-school-and-corporation-data-reports	Under "Graduation/Dropout"	August, 2017	South Carolina	South Carolina Department of Education	Download	https://ed.sc.gov/data/report-cards/state-report-cards/2016/data-files-for-researchers-2016/		August, 2017
Iowa	Iowa Department of Education	Download	https://www.educateiowa.gov/documents/graduates/2017/04/iowa-public-high-school-class-2016-4-year-graduation-data-school-and		August, 2017	South Dakota	South Dakota Department of Education	Download	http://www.doe.sd.gov/reportcard/index.aspx	Under "Graduation/Completer Rates"	December, 2017
Kansas	Kansas State Department of Education	Download	http://ksreportcard.ksde.org/grad.aspx?org_no=State&rptType=3	Select "Download Full Results"	March, 2018	Tennessee	Tennessee Department of Education	Download	https://www.tn.gov/education/data/data-downloads.html	Under "Additional Data"	December, 2017
Kentucky	Kentucky Department of Education	Download	http://applications.education.ky.gov/SRC/DataSets.aspx	Under "Delivery Targets"	September, 2017	Texas	Texas Education Agency	Download	https://tea.texas.gov/acctres/completion/2016/level.html		August, 2017
Louisiana	Louisiana Department of Education	Download	https://www.louisianabelieves.com/resources/library/high-school-performance		August, 2017	Utah	Utah State Board of Education	Data request			September, 2017
Maine	Maine Department of Education	Download	http://dw.education.maine.gov/DirectoryManager/WEB/Maine_Report/GraduationDT.aspx		August, 2017	Vermont	State of Vermont Agency of Education	Data request			January, 2018
Maryland	Maryland State Department of Education	Download	All students:http://reportcard.msde.maryland.gov/downloadindex.aspx?K=99AAAA Disaggregation: http://reportcard.msde.maryland.gov/Graduation.aspx?K=03AAAA		All students: August, 2017 Disaggregation: January, 2018	Virginia	Virginia Department of Education	Download	http://www.doe.virginia.gov/statistics_reports/graduation_completion/cohort_reports/index.shtml		August, 2017

State	Department		Link	Instructions	Date	State	Department		Link	Instructions	Date
Massachusetts	Massachusetts Department of Elementary and Secondary Education	Download	http://profiles.doe.mass.edu/state_report/gradrates.aspx		All students: August, 2017 Disaggregation: December, 2017	Washington	State of Washington Office of Superintendent of Public Instruction	Download	http://www.k12.wa.us/DataAdmin/Dropout-Grad.aspx		August, 2017
Michigan	Michigan Department of Education	Download	https://www.mischooldata.org/DistrictSchoolProfiles2/EntitySummary/SchoolDataFile.aspx	Submit form for files	September, 2017	West Virginia	West Virginia Department of Education	Download	https://zoomwv.k12.wv.us/Dashboard/portalHome.jsp	Select "Graduation" on top bar. Select "Previous Cohort Grad Rate Reports" under "Related Links"	September, 2017
Minnesota	Minnesota Department of Education	Download	http://w20.education.state.mn.us/MDEAnalytics/Data.jsp	Select "Student" under "Student Data"	August, 2017	Wisconsin	Wisconsin Department of Public Instruction	Download	https://dpi.wi.gov/wisedash/download-files/type?field_wisedash_upload_type_value=hs-completion&field_wisedash_data_view_value=Certified#disclaimer		September, 2017
Mississippi	Mississippi Department of Education	Download	http://mdereports.mdek12.org/report/report2016.aspx		September, 2017	Wyoming	Wyoming Department of Education	Download	https://portals.edu.wyoming.gov/Reports/Public/wde-reports-2012/public-reports/gradrates/fedfouryearadjustedschool		September, 2017
Missouri	Missouri Department of Elementary & Secondary Education	Download	https://mcds.dese.mo.gov/quickfacts/Pages/Career-Education.aspx	Select "Building Adjusted Cohort Graduation Rate" under "District and Building Graduation and Dropout Indicators"	September, 2017						

Appendix F: Third-grade Reading Proficiency Data Sources

State	Author	Method of Acquisition	Hyperlink (active as of April 20, 2018)	Click-through	Month of Data Acquisition	State	Author	Method of Acquisition	Hyperlink (active as of April 20, 2018)	Click-through	Month of Data Acquisition
Alabama	Alabama State Department of Education	Download	http://www.alsde.edu/dept/data/Pages/assessment-all.aspx?navtext=Assessment%20Reports:%20Statewide%20Reports		September, 2017	Montana	Montana Office of Public Instruction	Data request			December, 2017
Alaska	Alaska Department of Education & Early Development	Data request			December, 2017	Nebraska	Nebraska Department of Education	Download	http://nep.education.ne.gov/Links	Select "NeSA Reading Assessments Detail Data"	March, 2018
Arizona	Arizona Department of Education	Download	http://www.azed.gov/accountability-research/data/		August, 2017	Nevada	State of Nevada Department of Education	Download	http://nevadareportcard.com/di/main/assessment	Select "CRT (New NV Standards" under "Exam. "Select Schools. Select all districts and schools under the "Available" table and move to the "Selected" table.	March, 2018
Arkansas	Arkansas Department of Education	Download	http://www.arkansased.gov/divisions/learning-services/student-assessment/test-scores/year?y=2017		October, 2017	New Hampshire	New Hampshire Department of Education	Download	https://www.education.nh.gov/instruction/assessment/index.htm	Select "2017 Smarter Balanced Disaggregated Data File" under "2017 Final Assessment Results for SAT and Smarter Balanced"	December, 2017
California	California Department of Education	Download	Reading proficiency: https://caaspp.cde.ca.gov/sb2017/ResearchFileListCAA?ps=true&lstTestType=A&lstCounty=00&lstCntyNam=Select%20County...&lstTestYear=2016 Enrollment: https://www.cde.ca.gov/ds/sd/sd/filesenr.asp		Third-grade reading proficiency: December, 2017 Enrollment: March, 2018	New Jersey	State of New Jersey Department of Education	Download	http://www.state.nj.us/education/schools/achievement/16/parcc/spring/excel.htm		August, 2017
Colorado	Colorado Department of Education	Download	http://www.cde.state.co.us/assessment/cmas-dataandresults		January, 2018	New Mexico	New Mexico Public Education Department	Download	https://webnew.ped.state.nm.us/bureaus/accountability/achievement-data/	Select "Proficiencies Webfiles, State, District, School by Grade 2017"	January, 2018
Connecticut	Connecticut State Department of Education	Download	http://edsight.ct.gov/SASPortal/main.do	Select "Smarter Balanced" under "Performance"	December, 2017	New York	New York State Education Department	Download	https://data.nysed.gov/downloads.php	Select "3-8 Assessment Database"	September, 2017
Delaware	Delaware Department of Education	Download	https://data.delaware.gov/Education/Student-Performance/a7g2-pjpe		November, 2017	North Carolina	Public Schools of North Carolina	Download	http://www.ncpublicschools.org/src/researchers/	Select "Drilldown" under "Ready Accountability Tables"	December, 2017
District of Columbia	District of Columbia Public Schools	Download	https://dcps.dc.gov/publication/dcps-data-set-parcc		August, 2017	North Dakota	North Dakota Department of Public Instruction	Data request			September, 2017

State	Source	Method	URL	Instructions	Date	State	Source	Method	URL	Instructions	Date
Florida	Florida Department of Education	Download	http://www.fldoe.org/accountability/data-sys/edw/	Select "Florida PK-20 Education Information Portal" on left sidebar" -> Select "PK-12 Public Schools"-> Select "English Language Arts" under "Assessments"-> Select "Build Your Own Table"	January, 2018	Ohio	Ohio Department of Education	Download	http://reportcard.education.ohio.gov/Pages/Download-Data.aspx	Select year->select "School Building Data"->select "Building Achievement Ratings"	December, 2017
Georgia	The Governor's Office of Student Achievement	Download	https://gosa.georgia.gov/downloadable-data		December, 2017	Oklahoma	Oklahoma State Department of Education	Download	http://sde.ok.gov/sde/accountability-resources	Under "Data"	August, 2017
Hawaii	Hawaii State Department of Education	Download	http://www.hawaiipublicschools.org/VisionForSuccess/AdvancingEducation/StriveHIPerformanceSystem/Pages/2016-17-results.aspx		December, 2017	Oregon	Oregon.gov	Download	http://www.oregon.gov/ode/educator-resources/assessment/Pages/Assessment-Group-Reports-for-2014-2015-and-2015-2016.aspx		September, 2017
Idaho	Idaho State Department of Education	Download	http://sde.idaho.gov/communications/frequently-requested-data.html		August, 2017	Pennsylvania	Pennsylvania Department of Education	Data request			January, 2018
Illinois	Illinois State Board of Education	Download	https://www.isbe.net/Pages/Illinois-State-Report-Card-Data.aspx		February, 2018	Rhode Island	Rhode Island Department of Education	Data request			January, 2018
Indiana	Indiana Department of Education	Download	https://www.doe.in.gov/accountability/find-school-and-corporation-data-reports	select "2017 ISTEP+ School Results Grades 3-8"	January, 2018	South Carolina	South Carolina Department of Education	Download	https://ed.sc.gov/data/test-scores/state-assessments/sc-ready/2017/	Select "SC READY 2017 Data File" under "2017" under "Data" on the right sidebar	October, 2017
Iowa	Iowa Department of Education	Data request			August, 2017	South Dakota	South Dakota Department of Education	Download	http://doe.sd.gov/reportcard/index.aspx	Select "English Language Arts 2015-16" under "Report Card Tables"	September, 2017
Kansas	Kansas State Department of Education	Download	http://ksreportcard.ksde.org/assessment_results.aspx?org_no=State&rptType=3	Select "Download Full Results"	December, 2017	Tennessee	Tennessee Department of Education	Download	https://www.tn.gov/education/data/data-downloads.html	Select "Base Accountability File Updated 12/13/16" under "State Assessments"	September, 2017
Kentucky	Kentucky Department of Education	Download	http://applications.education.ky.gov/SRC/DataSets.aspx	Select "Grade" under "KPREP" under "Assessment"	September, 2017	Texas	Texas Education Agency	Download	https://rptsvr1.tea.texas.gov/perfreport/tapr/2017/download/DownloadData.html		August, 2017
Louisiana	Louisiana Department of Education	Download	https://www.louisianabelieves.com/resources/library/pk-8-performance	Select "Spring 2017 State-LEA-School LEAP Achievement Level Summary"	August, 2017	Utah	Utah State Board of Education	Download	https://www.schools.utah.gov/data/reports	Under "SAGE Proficiency Rates"	September, 2017
Maine	Maine Department of Education	Data request			September, 2017	Vermont	State of Vermont Agency of Education	Data request			January, 2018
Maryland	Maryland State Department of Education	Download	http://reportcard.msde.maryland.gov/downloadindex.aspx?K=99AAAA		August, 2017	Virginia	Virginia Department of Education	Download	http://www.doe.virginia.gov/statistics_reports/school_report_card/index.shtml	Select "School Subject-Area"	December, 2017

City Health DASHBOARD

Massachusetts	Massachusetts Department of Elementary and Secondary Education	Download	http://profiles.doe.mass.edu/statereport/nextgenmcas.aspx		April, 2018	Washington	State of Washington Office of Superintendent of Public Instruction	Download	http://reportcard.ospi.k12.wa.us/DataDownload.aspx	Select "AIM-EOC-MSP-SBA Assessments School (with suppression - new format)" under "AIM/EOC/MSP/SBA Data Downloads"	September, 2017
Michigan	Michigan Department of Education	Download	https://www.mischooldata.org/DistrictSchoolProfiles2/EntitySummary/SchoolDataFile.aspx		September, 2017	West Virginia	West Virginia Department of Education	Download	https://zoomwv.k12.wv.us/Dashboard/portalHome.jsp	Select "State Assessment Results" on top bar. Select "SY16-17 Assessment Proficiency & Subgroup Summary" under "Related Links"	December, 2017
Minnesota	Minnesota Department of Education	Download	http://w20.education.state.mn.us/MDEAnalytics/DataTopic.jsp?TOPICID=1	Select "TAB" file	December, 2017	Wisconsin	Wisconsin Department of Public Instruction	Download	https://dpi.wi.gov/wisedash/download-files/type?field_wisedash_upload_type_value=Forward&field_wisedash_data_view_value=Certified		September, 2017
Mississippi	Mississippi Department of Education	Download	http://mdereports.mdek12.org/report1/r2016-17.aspx	Select "2017 Mississippi Academic Assessment Program (MAAP) Results"	September, 2017	Wyoming	Wyoming Department of Education	Download	https://fusion.edu.wyoming.gov/MySites/Data_Reporting/data_reporting_assessment_reports.aspx	Select "Performance Level Results Grades 3-8 and 11 PAWS, ACT, and WY-ALT Disaggregated-School Level"	December, 2017
Missouri	Missouri Department of Elementary & Secondary Education	Download	https://mcds.dese.mo.gov/quickfacts/Pages/State-Assessment.aspx/		September, 2017						

Appendix G: Glossary of Terms

Definitions are presented here verbatim from their source.

Adjusted Cohort: The result of removing any allowable exclusions from a cohort (or subcohort). For the Fall Enrollment component, it is the cohort for calculating retention rate; for the Graduation Rates component, this is the cohort from which graduation and transfer-out rates are calculated; and for the Outcome Measures component, these are the four cohorts (first-time, full-time; first-time, part-time; non-first-time, full-time; or nonfirst-time, part-time) for which outcomes rates are calculated at 4, 6, and 8 years.[12]

Cohort: A specific group of students established for tracking purposes.[12]

Graduate rate: The four-year or extended-year adjusted cohort graduation rate as defined by 34 CFR 200.19(b)(1).[13]

Local education agency: As defined in ESEA, a public board of education or other public authority legally constituted within a State for either administrative control or direction of, or to perform a service function for, public elementary schools or secondary schools in a city, county, township, school district, or other political subdivision of a State, or for a combination of school districts or counties that is recognized in a State as an administrative agency for its public elementary schools or secondary schools.[13]

Macro: a code for performing a specific task. In the case of the Dashboard, a macro is used to import different state-based education data files in SAS to create a unified dataset.

NCES School District ID: The 7 digit school identification number. The first 2 digits of the 7 digit school district ID identify the state and the last 5 identify the district ID. Put together, they make a 7 digit unique ID code for each school district.[14]

NCES School ID: The 5 digit school identification number. When combined with the NCES School District ID, the two codes comprise a unique 12 digit code for each school. The first 7 digits of the 12 digit school ID are the district ID, and the last five are the school ID.[14]

Other/Alternative Schools: A public elementary/secondary school that (1) addresses needs of students that typically cannot be met in a regular school, (2) provides nontraditional education, (3) serves as an adjunct to a regular school, or (4) falls outside the categories of regular, special education, or vocational education.[14]

Regular Schools: A public elementary/secondary school providing instruction and education services that does not focus primarily on special education, vocational/technical education, or alternative education, or on any of the particular themes associated with magnet/special program emphasis schools.[14]

Special Education Schools: A public elementary/secondary school that focuses primarily on special education—including instruction for any of the following students with: autism, deaf-blindness, developmental delay, hearing impairment, intellectual disability, multiple disabilities, orthopedic impairment, serious emotional disturbance, specific learning disability, speech or language impairment, traumatic brain injury, visual impairment, and other health impairments—and that adapts curriculum, materials, or instruction for students served.[14]

Vocational Schools: A public elementary/secondary school that focuses primarily on providing formal preparation for semiskilled, skilled, technical, or professional occupations for high school-age students who have opted to develop or expand their employment opportunities, often in lieu of preparing for college entry.[14]

Abbreviations

CDC Centers for Disease Control and Prevention
EDFacts U.S. Department of Education EDFacts
ELA English Language Arts
LEA Local Education Agency
NCES National Center for Education Statistics
NCES EDGE National Center for Education Statistics Education Demographic and Geographic Estimates
NCES ELSI National Center for Education Statistics Elementary and Secondary Information System
PARCC Partnership for Assessment of Readiness for College and Careers
SBA Smarter Balanced Assessment