

Appendix Table A-1. Data Sources and Notes

Detailed information about the source and relevant observations about the data used for the projections for the nation, regions, and each state. (This information is also provided with the projections in the downloadable datasets and charts.)

Nation and Regions

United States	<p>The U.S. Public Schools graduates values for SY 2016-17 to 2018-19 include a projected portion (for Delaware, Nevada and Vermont); U.S. values are fully projected beginning SY 2019-20. Projections for U.S. Private Schools begin SY 2017-18. The U.S. Grand Total includes projected values in SY 2016-17 to 2018-19, and is fully projected beginning SY 2019-20. Each series is independently projected, so they may not exactly sum to the totals. Public school graduates through SY 2012-13 (and enrollments through SY 2018-19) are from the National Center for Education Statistics (NCES) Common Core of Data (https://nces.ed.gov/ccd/). This Technical Appendix provides full data details, including for private school data, which utilize survey-based estimates from NCES Private School Universe Survey (https://nces.ed.gov/surveys/pss/). The U.S. (national) data and projections include the 50 states and District of Columbia, but projections may not exactly equal the sum of the states and D.C., because the national projections are made independently of the states. The U.S. (national) projections include a supplemental series of the combined estimated American Indian/Alaska Native graduates from public and BIE schools.</p>
Midwest	<p>The WICHE-defined Midwest region does not include North Dakota and South Dakota; they are included with other WICHE member states in the WICHE West region. The Midwest region Public Schools graduate projections begin SY 2019-20, projections for Private Schools begin SY 2017-18, and the Grand Total includes projected values in SY 2017-18 to 2018-19, and is fully projected beginning SY 2019-20. Each series is independently projected, so they may not exactly sum to the totals. Public school graduates through SY 2012-13 (and enrollments through SY 2018-19) are from the National Center for Education Statistics (NCES) Common Core of Data (https://nces.ed.gov/ccd/). Public school graduates SY 2013-14 to 2018-19 are data gathered from states. This Technical Appendix provides full data details, including for private school data, which utilize survey-based estimates from NCES Private School Universe Survey (https://nces.ed.gov/surveys/pss/).</p>
Northeast	<p>Northeast region Public Schools graduates values for SY 2016-17 to 2018-19 include a projected portion (for Vermont, and for New Hampshire race/ethnicity series); values are fully projected beginning SY 2019-20. Projections for Private Schools begin SY 2017-18. The Grand Total includes projected values in SY 2016-17 to 2018-19, and is fully projected beginning SY 2019-20. Each series is independently projected, so they may not exactly sum to the totals. Public school graduates through SY 2012-13 (and enrollments through SY 2018-19) are from the National Center for Education Statistics (NCES) Common Core of Data (https://nces.ed.gov/ccd/). Public school graduates SY 2013-14 to 2018-19 are data gathered from states. This Technical Appendix provides full data details, including for private school data, which utilize survey-based estimates from NCES Private School Universe Survey (https://nces.ed.gov/surveys/pss/).</p>
South	<p>South region Public Schools graduates values for 2018-19 include a projected portion (for Delaware); values are fully projected beginning SY 2019-20. Projections for Private Schools begin SY 2017-18. The Grand Total includes projected values in SY 2017-18 to 2018-19, and is fully projected beginning SY 2019-20. Public school graduates through SY 2012-13 (and enrollments through SY 2018-19) are from the National Center for Education Statistics (NCES) Common Core of Data (https://nces.ed.gov/ccd/). Public school graduates SY 2013-14 to 2018-19 are data gathered from states. This Technical Appendix provides full data details, including for private school data, which utilize survey-based estimates from NCES Private School Universe Survey (https://nces.ed.gov/surveys/pss/).</p>

West

The WICHE-defined West region is a total of WICHE member states, including North and South Dakota. Public Schools graduates values for 2018-19 include a projected portion (for Nevada); values are fully projected beginning SY 2019-20. Projections for Private Schools begin SY 2017-18. The Grand Total includes projected values in SY 2017-18 to 2018-19, and is fully projected beginning SY 2019-20. Each series is independently projected, so they may not exactly sum to the totals. Public school graduates through SY 2012-13 (and enrollments through SY 2018-19) are from the National Center for Education Statistics (NCES) Common Core of Data (<https://nces.ed.gov/ccd/>). Public school graduates SY 2013-14 to 2018-19 are data gathered from states. This Technical Appendix provides full data details, including for private school data, which utilize survey-based estimates from NCES Private School Universe Survey (<https://nces.ed.gov/surveys/pss/>).

Census Divisions

Pacific (AK, CA, HI, OR, WA (and MP, GU))

Public Schools graduates projections begin SY 2019-20, projections for Private Schools begin SY 2017-18, and the Grand Total includes projected values in SY 2017-18 to 2018-19, and is fully projected beginning SY 2019-20. Each series is independently projected, so they may not exactly sum to the totals. Public school graduates through SY 2012-13 (and enrollments through SY 2018-19) are from the National Center for Education Statistics (NCES) Common Core of Data (<https://nces.ed.gov/ccd/>). Public school graduates SY 2013-14 to 2018-19 are data gathered from states. This Technical Appendix provides full data details, including for private school data, which utilize survey-based estimates from NCES Private School Universe Survey (<https://nces.ed.gov/surveys/pss/>).

Mountain (AZ, CO, ID, MT, NV, NM, UT, WY)

Public Schools graduates values for 2018-19 include a projected portion (for Nevada); values are fully projected beginning SY 2019-20. Projections for Private Schools begin SY 2017-18. The Grand Total includes projected values in SY 2017-18 to 2018-19, and is fully projected beginning SY 2019-20. Each series is independently projected, so they may not exactly sum to the totals. Public school graduates through SY 2012-13 (and enrollments through SY 2018-19) are from the National Center for Education Statistics (NCES) Common Core of Data (<https://nces.ed.gov/ccd/>). Public school graduates SY 2013-14 to 2018-19 are data gathered from states. This Technical Appendix provides full data details, including for private school data, which utilize survey-based estimates from NCES Private School Universe Survey (<https://nces.ed.gov/surveys/pss/>).

West North Central (IA, KS, MN, MO, NE, ND, SD)

Public Schools graduates projections begin SY 2019-20, projections for Private Schools begin SY 2017-18, and the Grand Total includes projected values in SY 2017-18 to 2018-19, and is fully projected beginning SY 2019-20. Each series is independently projected, so they may not exactly sum to the totals. Public school graduates through SY 2012-13 (and enrollments through SY 2018-19) are from the National Center for Education Statistics (NCES) Common Core of Data (<https://nces.ed.gov/ccd/>). Public school graduates SY 2013-14 to 2018-19 are data gathered from states. This Technical Appendix provides full data details, including for private school data, which utilize survey-based estimates from NCES Private School Universe Survey (<https://nces.ed.gov/surveys/pss/>). Several grade level estimates for SY 2013-14 private school enrollments had coefficients of variation between 27% and 28%, and should be used with caution. No adjustments were made for using these values in the projections.

West South Central (AR, LA, OK, TX)

Public Schools graduates projections begin SY 2019-20, projections for Private Schools begin SY 2017-18, and the Grand Total includes projected values in SY 2017-18 to 2018-19, and is fully projected beginning SY 2019-20. Each series is independently projected, so they may not exactly sum to the totals. Public school graduates through SY 2012-13 (and enrollments through SY 2018-19) are from the National Center

for Education Statistics (NCES) Common Core of Data (<https://nces.ed.gov/ccd/>). Public school graduates SY 2013-14 to 2018-19 are data gathered from states. This Technical Appendix provides full data details, including for private school data, which utilize survey-based estimates from NCES Private School Universe Survey (<https://nces.ed.gov/surveys/pss/>).

East North Central (IL, IN, MI, OH, WI)

Public Schools graduates projections begin SY 2019-20, projections for Private Schools begin SY 2017-18, and the Grand Total includes projected values in SY 2017-18 to 2018-19, and is fully projected beginning SY 2019-20. Each series is independently projected, so they may not exactly sum to the totals. Public school graduates through SY 2012-13 (and enrollments through SY 2018-19) are from the National Center for Education Statistics (NCES) Common Core of Data (<https://nces.ed.gov/ccd/>). Public school graduates SY 2013-14 to 2018-19 are data gathered from states. This Technical Appendix provides full data details, including for private school data, which utilize survey-based estimates from NCES Private School Universe Survey (<https://nces.ed.gov/surveys/pss/>).

East South Central (AL, KY, MS, TN)

Public Schools graduates projections begin SY 2019-20, projections for Private Schools begin SY 2017-18, and the Grand Total includes projected values in SY 2017-18 to 2018-19, and is fully projected beginning SY 2019-20. Each series is independently projected, so they may not exactly sum to the totals. Public school graduates through SY 2012-13 (and enrollments through SY 2018-19) are from the National Center for Education Statistics (NCES) Common Core of Data (<https://nces.ed.gov/ccd/>). Public school graduates SY 2013-14 to 2018-19 are data gathered from states. This Technical Appendix provides full data details, including for private school data, which utilize survey-based estimates from NCES Private School Universe Survey (<https://nces.ed.gov/surveys/pss/>). Several grade level estimates for SY 2017-18 private school enrollments had coefficients of variation between 29% and 32%, and should be used with caution. No adjustments were made for using these values in the projections.

New England (CT, MA, ME, NH, RI, VT)

Public Schools graduates values for SY 2016-17 to 2018-19 include a projected portion (for Vermont, and for New Hampshire race/ethnicity series); values are fully projected beginning SY 2019-20. Projections for Private Schools begin SY 2017-18. The Grand Total includes projected values in SY 2016-17 to 2018-19, and is fully projected beginning SY 2019-20. Each series is independently projected, so they may not exactly sum to the totals. Public school graduates through SY 2012-13 (and enrollments through SY 2018-19) are from the National Center for Education Statistics (NCES) Common Core of Data (<https://nces.ed.gov/ccd/>). Public school graduates SY 2013-14 to 2018-19 are data gathered from states. This Technical Appendix provides full data details, including for private school data, which utilize survey-based estimates from NCES Private School Universe Survey (<https://nces.ed.gov/surveys/pss/>).

Mid-Atlantic (NJ, NY, PA)

Public Schools graduates projections begin SY 2019-20, projections for Private Schools begin SY 2017-18, and the Grand Total includes projected values in SY 2017-18 to 2018-19, and is fully projected beginning SY 2019-20. Each series is independently projected, so they may not exactly sum to the totals. Public school graduates through SY 2012-13 (and enrollments through SY 2018-19) are from the National Center for Education Statistics (NCES) Common Core of Data (<https://nces.ed.gov/ccd/>). Public school graduates SY 2013-14 to 2018-19 are data gathered from states. This Technical Appendix provides full data details, including for private school data, which utilize survey-based estimates from NCES Private School Universe Survey (<https://nces.ed.gov/surveys/pss/>).

South Atlantic (DE, DC, FL, GA, MD, NC, SC, VA, WV)

Public Schools graduates values for 2018-19 include a projected portion (for Delaware); values are fully projected beginning SY 2019-20. Projections for Private Schools begin SY 2017-18. The Grand Total includes projected values in SY 2017-18 to 2018-19, and is fully projected beginning SY 2019-20. Public

school graduates through SY 2012-13 (and enrollments through SY 2018-19) are from the National Center for Education Statistics (NCES) Common Core of Data (<https://nces.ed.gov/ccd/>). Public school graduates SY 2013-14 to 2018-19 are data gathered from states. This Technical Appendix provides full data details, including for private school data, which utilize survey-based estimates from NCES Private School Universe Survey (<https://nces.ed.gov/surveys/pss/>).

State Data Notes

Unless otherwise noted for a specific state: graduate projections begin SY 2019-20 for Public Schools, SY 2017-18 for Private Schools, and the Grand Total is fully projected beginning SY 2019-20 but includes the Private school projected portion SY 2017-18 and 2018-19. Each series is independently projected, so they may not exactly sum to the totals. Public school graduates through SY 2012-13 and enrollments through SY 2018-19 are from the National Center for Education Statistics (NCES) Common Core of Data, <https://nces.ed.gov/ccd/>. This Technical Appendix provides full data details, including about private school data, which are estimates computed from survey-based data from NCES Private School Universe Survey, <https://nces.ed.gov/surveys/pss/>.

Alabama	Public school graduates for SY 2013-14 to 2018-19 received by request in October 2020 from alsde.org. WICHE observed anomalies observed in the categorization of received public high school graduates by race/ethnicity for 2013-14, but no adjustments were made, because 2013-14 is primarily displayed for historical considerations and not critical in the projection methodology.
Alaska	Public school graduates for SY 2013-14 to 2018-19 received in April 2020 by request to https://education.alaska.gov . Separately reported American Indian and Alaska Native counts in the data received were aggregated for a total of American Indian/Alaska Native graduates. Private school graduates for virtually all years since 2000 are estimated by WICHE, derived as a percentage of 12th graders reflecting an average of 98 percent grade-12-to-graduation progression. Private school graduate counts are not available from the Alaska state department of education or the primary NCES source of data for this series.
Arizona	Public school graduates for SY 2013-14 to 2018-19 are ESTIMATES COMPUTED BY WICHE (not confirmed total annual graduates) using data about graduates from ninth-grade cohorts that WICHE was pointed to at https://www.azed.gov/accountability-research/data/ in Summer 2020, because Arizona department of education was not able to provide the requested total annual graduates. Estimates based on graduates within 4 to 7 years of their defined ninth grade cohort may be a reasonable approximation of total annual graduates. The Arizona estimates only capture graduates within 4 or 5 years of their defined ninth grade cohort, and as such may systematically underreport the total number of graduates by a small, but consistent, amount. And, users should keep in mind these are a computed estimate from data that may not be specifically for this purpose.
Arkansas	Public school graduates for SY 2013-14 and forward compiled April to July 2020 from data available at https://adedata.arkansas.gov/statewide/ReportList/State/Graduates.aspx . WICHE observed anomalies with 2014-15 graduate data. According to Arkansas Department of Education: the 2014-2015 Graduates are correct based on the data submitted by the Districts, but for the 2014-2015 SY there was a change in the Race Field in eSchool which resulted in the incorrect race being selected. WICHE was not able to adjust the data due to insufficient information for deriving the correct values. Several grade level estimates for SY 2015-16 private school enrollments had coefficients of variation between 26% and 39%, and should be used with caution. These estimates indicated 30% increase of private school students in certain grades between SY 2013-14 and 2015-16. But, no adjustments were made for using these values in the projections because they did not appear to lead to any material differences in the projections.
California	Public school graduates for SY 2013-14 to 2018-19 compiled in August 2020 from data available at https://www.cde.ca.gov/ds/sd/sd .

Colorado	Public school graduates for SY 2013-14 to 2018-19 compiled in March 2020 from data received by request from Colorado Department of Education. Several grade level estimates for SY 2015-16 private school enrollments had coefficients of variation between 28% and 49%, and should be used with caution. No adjustments were made for using these values in the projections; they did not appear to materially impact the projections.
Connecticut	Public school graduates for SY 2013-14 to 2018-19 received in April 2020 by request per instructions at edsight.ct.gov . Several grade level estimates for SY 2013-14 and 2017-18 private school enrollments had coefficients of variation between 29% and 41%, and should be used with caution. No adjustments were made for using these values in the projections.
Delaware	For Delaware: Graduate projections begin SY 2018-19 for Public Schools, SY 2017-18 for Private Schools, and the Grand Total is fully projected beginning SY 2018-19 but includes the Private school projected portion SY 2017-18. Each series is independently projected, so they may not exactly sum to the totals. Public school graduates through SY 2012-13 (and enrollments through SY 2018-19) are from the National Center for Education Statistics (NCES) Common Core of Data (https://nces.ed.gov/ccd/). This Technical Appendix provides full data details, including for private school data, which utilize survey-based estimates from NCES Private School Universe Survey (https://nces.ed.gov/surveys/pss/). Specific to Delaware: Public school graduates for SY 2014-15 to 2017-18 are ESTIMATES COMPUTED BY WICHE (not confirmed total annual graduates) using data about graduates from ninth-grade cohorts that WICHE obtained in August 2020 from data available at https://data.delaware.gov/Education/Student-Graduation/t7e6-zcnn because WICHE was unable to obtain the requested total annual graduate data from Delaware department of education. Estimates based on graduates within 4 to 7 years of their defined ninth grade cohort may be a reasonable approximation of total annual graduates. The Delaware estimates only capture graduates within 4 or 5 years of their defined ninth grade cohort, and as such may systematically underreport the total number of graduates by a small, but consistent, amount. And, users should keep in mind these are a computed estimate from data that may not be specifically for this purpose. The source data did not provide counts for American Indian/Alaska Native graduates, or Native Hawaiian/Other Pacific Islander graduates separate from Asian graduates (they are presumably redacted due to small numbers), so they are also not projected; and the Asian/Pacific Islander category may be the same or very similar in number to Asian alone category, since the specific additional number of NH/OPI graduates is not known. Values for 2013-14 were imputed by WICHE (but 2013-14 is primarily displayed for historical considerations and not critical in the projection methodology). WICHE also observes but made no alterations for an unusual increase in the number of Delaware births for 2017 and 2018 that are classified as Hispanic, which drives a sudden increase of high school graduates in the last several projected years. Delaware private school grade level estimates for SY 2017-18 had coefficients of variation $\geq 50\%$ and were suppressed from use in the projections. Private school graduate projections still begin with 2017-18, but enrollment projections begin with SY 2016-17. In practical terms, the estimates with unacceptable levels indicated 50% increases in private school students between 2015-16 and 2017-18; the adjusted projections reflect the pattern of Delaware private school enrollment declines in all observed years through 2015-16.
District of Columbia	Public school graduates for SY 2013-14 to 2018-19 are ESTIMATES COMPUTED BY WICHE (not confirmed total annual graduates) using data about graduates from ninth-grade cohorts that WICHE was referred to at https://osse.dc.gov/page/data-and-reports-0 , because D.C. OSSE was not able to provide the requested total annual graduate data. Estimates based on graduates within 4 to 7 years of their defined ninth grade cohort may be a reasonable approximation of total annual graduates. The D.C. estimates only capture graduates within 4 or 5 years of their defined ninth grade cohort, and as such may systematically underreport the total number of graduates by a small, but consistent, amount. And, users should keep in mind these are a computed estimate from data that may not be specifically for this purpose. The source data did not provide counts for American Indian/Alaska Native graduates, or Native Hawaiian/Other Pacific Islander graduates separate from Asian graduates, so these categories of graduates are not projected

(there were typically 5 or fewer such 12th graders); and the count of Asian/Pacific Islanders may be the same or very similar in number to Asian alone category, since the specific additional number of NH/OPI graduates is not known. Estimates for SY 2015-16 D.C. private school grade 6 students had a coefficient of variation $\geq 50\%$ and was suppressed. Estimates for grade 7 and 8 students had CVs of 42% and 48%, respectively, and should be used with caution. A replacement estimate was imputed for grade 6 students from surrounding year data, but not for grade 7 or 8; there were no material changes to the projections before or after the adjustments. In practical terms, the estimates indicate a very strong increase of private high school students between 2009-10 and 2013-14 that was not sustained through 2017-18, and stagnant or decreasing private elementary school numbers.

Florida	Public school graduates for SY 2013-14 to 2018-19 compiled in August 2020 from data available at http://www.fldoe.org/accountability/data-sys/edu-info-accountability-services/pk-12-public-school-data-pubs-reports . While there was no obvious reason to adjust these data or the projection methodology, WICHE notes that the Florida private school estimates indicate increases of 30-45% in all grade levels between 2010-11 and 2017-18, which lead to a multiplier effect in the projections for private schools. This rate of perpetual increase may be implausible.
Georgia	Public school graduates for SY 2013-14 to 2018-19 compiled in June to August 2020 from data available at https://gosa.georgia.gov/report-card-dashboards-data/downloadable-data . WICHE did not project Native Hawaiian/Other Pacific Islander graduates separate from Asian, because data about them were not reported separately in the data available from Georgia.gov. WICHE was not able to confirm in which category these students are counted, but with about 130 NH/OPI 12th graders annually in recent years, an estimated 2.8 percent of the graduates categorized as Asian could be NH/OPI, if they are counted there, or 4.5 percent of Two or more races graduates, if reported there. And, the Asian/Pacific Islander category may be the same or very similar in number to Asian alone category, since the specific number of NH/OPI graduates is not known. Georgia private school grade-level estimates for SY 2015-16 have coefficients of variation between 27% and 41% and should be used with caution, but no adjustments were made to the values before use in the projections. In practical terms, avoiding the SY 2015-16 year of data in making the projections, with its higher enrollment estimates, would produce projections of private school graduates that were on average 16 percent lower over the projected years.
Hawai'i	Public school graduates for SY 2013-14 to 2018-19 provided by the Hawai'i Data eXchange Partnership (DXP ID651) (2020). In SY 2014-15, the date students must be age 5 to attend Kindergarten changed. Therefore, SY 2015-16 had essentially "5 less months of students". This change, in addition to a decrease in birth rates in 2009, resulted in a drop in SY 2015-16 early elementary grade enrollments, and this smaller cohort will likely remain small until these students graduate. WICHE also observes that the number of Hawai'i public school graduates categorized as multi-racial is substantially lower in these data as ratio of 12th graders, than from Common Core of Data graduate counts for SY 2010-11 to 2012-13. And, the sum of public graduates by race/ethnicity is slightly less than the public school total. Combined, these data nuances result in some apparently unusual projections for outer years. Grade level estimates for SY 2015-16 Hawai'i private school enrollments have coefficients of variation between 30% and 39%; grade 6 CV is 44%. These estimates should be used with caution. Practically speaking, the estimates indicate an average of 35% increase of Hawai'i private school enrollments in each grade and graduates between SY 2013-14 and 2015-16, and project a doubling of the number of private school graduates (by 2030 and after). But, there was no basis for altering the projections.
Idaho	Public school graduates for SY 2013-14 to 2018-19 received by request in March 2020 from http://www.sde.idaho.gov/communications/public-records-requests.html . Idaho private school grades 1 and 2 student estimates for SY 2017-18 had coefficients of variation of 41% and 50%, and were suppressed from use in the projections. Private school graduate projections still begin with 2017-18, but Idaho private school grade 1 and grade 2 projections begin with 2016-17 (all other grade projections begin with 2018-19). In

practical terms, the estimates for the last year of private school enrollment data (SY 2017-18) indicated strong enrollment increases, which results in projecting continuing strong increase for the sector, increasing from 4% of total graduates to 6% over the timeframe projected.

Illinois	Public school graduates for SY 2013-14 to 2018-19 received by public information data request June to October 2020 from https://www.isbe.net/foia .
Indiana	Public school graduates for SY 2013-14 to 2018-19 received by request in March 2020 from Indiana Department of Education. Grades 1 to grade 8 estimates for SY 2015-16 and 2017-18 Indiana private school enrollments had coefficients of variation between 27% and 32%, and should be used with caution. No adjustments were made for using these values in the projections.
Iowa	Public school graduates for SY 2013-14 to 2018-19 received by request in June 2020 from the Iowa Department of Education. Many of the grade-level estimates for 2013-14 and 2015-16 Iowa private school grades 1 to 8 had unacceptably high coefficients of variation 37% to 70%. Therefore, estimates for grades 1 to 8 for SY 2013-14 and grades 1 to 5 for SY 2015-16 were suppressed if CV >=50%, or otherwise excluded from use in the projections methodology. In practical terms, these estimates with unacceptably high CVs indicated as much as 50-90% increases in Iowa private elementary students between 2011-12 and 2015-16, but this increase was not sustained by SY 2017-18. In effect, the resulting methodology adjustment leads to projections that capture 5-15% increase of private elementary school students between 2011-12 and 2017-18, and 14-28% increases in high school grades. These estimates and projections should be used with caution.
Kansas	Public school graduates for SY 2013-14 to 2018-19 compiled in July 2020 from data received by request from https://www.ksde.org/Data-Central/Data-Requests .
Kentucky	For Kentucky: Graduate projections begin SY 2019-20 for Public Schools, SY 2015-16 for Private Schools, and the Grand Total is fully projected beginning SY 2019-20 but includes the Private school projected portion SY 2015-16 to 2018-19. Each series is independently projected, so they may not exactly sum to the totals. Public school graduates through SY 2012-13 (and enrollments through SY 2018-19) are from the National Center for Education Statistics (NCES) Common Core of Data (https://nces.ed.gov/ccd/). This Technical Appendix provides full data details, including for private school data, which utilize survey-based estimates from NCES Private School Universe Survey (https://nces.ed.gov/surveys/pss/). Specific to Kentucky: Public school graduates for SY 2013-14 to 2018-19 received by request in May 2020 from education.ky.gov . WICHE observes a 9% decline in public school 1st grade enrollments between 2017-18 and 2018-19 (after some other accumulating decreases in other early grades) and similar declines in other early grade enrollments. An increase in births in recent years reverses the trend but leads to an inconsistent trend. No adjustment made to the data. Kentucky private school enrollment estimates for grades 9 to 12 for SY 2017-18 were suppressed due to coefficients of variation >=50%. So, Kentucky private school enrollment projections for grades 9 to 12 begin with SY 2016-17, whereas grades 1 to 8 begin with SY 2018-19. The private school graduate estimate for SY 2016-17 for Kentucky was flagged in the source data from NCES as having a CV of 30-50%, and the estimated number of graduates could not be confirmed by recent 12th grade count, so this value for SY 2016-17 was not used and Kentucky private high school graduate projections begin with 2015-16.
Louisiana	Public school graduates for SY 2013-14 to 2018-19 received by request in August 2020 from LDEPublicRecords@la.gov . Estimates for Louisiana private high school students (grades 8 to 12, and graduates) for SY 2015-16/2014-15 graduates had coefficients of variation reaching and exceeding 50%; they were suppressed from use in the projection methodology. Remaining grades 1-12 estimates for SY 2015-16 and 2017-18 also had CVs from 27-42%, and should be used with caution; but they were not excluded from the projections methodology. In practical terms, the grades 8-12 estimates with unacceptably high error indicated two-year increases in student numbers of up to 50%, that were not

sustained to SY 2017-18. The adjustments to exclude these problematic estimates from the projection methodology capture 5-15% increases indicated for Louisiana private high school students between 2013-14 and 2017-18, and 5-25% increases for private elementary students over the same period.

Maine	Public school graduates for SY 2013-14 to 2018-19 received in April 2020 by request per instructions at www.maine.gov/dae/ . WICHE was not able to isolate the publicly funded students of Maine's town tuitioning program who attend and graduate from a public-serving private school, so there may be some duplication in the Maine public and private school totals, and the grand total.
Maryland	Public school graduates for SY 2013-14 to 2018-19 compiled March to August 2020 from data available at http://www.marylandpublicschools.org/about/Pages/DCAA/SSP/index.aspx . The source data include Special Education Certificates (see Table 12 of report), which are not typically included for the primary definition of graduate for these projections. WICHE was able to deduct the Special Ed certificates from the data used for the Public Schools Total, but not from each public school race/ethnicity series, which therefore might be inflated by 1.1% to 1.4%, based on Special Ed certificates portion of the Total.
Massachusetts	Public school graduates for SY 2013-14 to 2018-19 compiled in March 2020 from data available at www.doe.mass.edu .
Michigan	Public school graduates for SY 2013-14 to 2018-19 compiled March to August 2020 from data available originally at https://www.mischooldata.org/college-progression-by-graduating-class/ and more recently at https://www.mischooldata.org/college-enrollment-by-hs-1/ (the source data URL changed). WICHE observes what appears to be some recategorization/category changes with the numbers of graduates categorized as Hispanic, White and Two or more races between 2013-14 and 2014-15, but no adjustments were made with the data obtained and these values are for historical reference and not critical to the projections. Michigan private school estimates for grades 8 and 9 for SY 2015-16 had coefficients of variation $\geq 50\%$ and were suppressed; all other grade-level estimates for this year had CVs between 39% and 48%. In practical terms, the estimates indicated a 25% to 30% increase in the number of students in each grade between 2013-14 and 2015-16, which was not sustained (was reversed in almost equal measure) to 2017-18. The estimates for SY 2015-16 were not used in the projection methodology. These estimates and projections should be used with caution.
Minnesota	Public school graduates for SY 2013-14 to 2018-19 compiled March to November 2020 from data available at https://education.mn.gov/MDE/Data/ , with supplemental data by request. Minnesota private school estimates for grades 1 to 8 for SY 2017-18 were suppressed due to coefficients of variation $\geq 50\%$, and therefore enrollments for Grades 1 to 8 are projected from SY 2016-17 onward (private school graduate projections still begin with 2017-18). Estimates for grades 9 to 12 for SY 2017-18 have coefficients of variation 29% to 38% and should be used with caution; but no adjustments were made to these estimates. In practical terms, the available estimates for recent years indicate decreasing numbers of grades 1 to 8 Minnesota private school students, but strong increases in the number of Minnesota private high school students and graduates.
Mississippi	Public school graduates for 2013-14 to 2019-19 received by request to https://mdek12.org/OPR/Reporting in May 2020. Native Hawaiian/Other Pacific Islander graduates were not available separately in the source data and therefore no projection is made for them; and, the Asian/Pacific Islander category may be the same or very similar in number to Asian alone category, since the specific number of NH/OPI graduates is not known.
Missouri	Public school graduates for SY 2013-14 to 2018-19 received in April 2020 by request to https://apps.dese.mo.gov/DataRequestForm/DataRequest.aspx . Estimates for private school grade 1 to 8 students had coefficients of variation $\geq 50\%$, and were suppressed. Also, several grade-level estimates for SY 2017-18 were between 29% and 34%, and should be used with caution; but they were not adjusted. In practical terms, the private school data indicate strong increases in the number of Missouri private high school

students over the years between 2009-10 and 2017-18, so increasing numbers of high school graduates are projected despite relatively stable or slightly decreasing elementary and middle school student numbers.

Montana	Public school graduates for SY 2013-14 to 2018-19 compiled in April 2020 from data available at https://gems.opi.mt.gov/CollegeReadiness/Pages/Overview.aspx .
Nebraska	For Nebraska: Graduate projections begin SY 2019-20 for Public Schools, SY 2015-16 for Private Schools, and the Grand Total is fully projected beginning SY 2019-20 but includes the Private school projected portion SY 2015-16 to 2018-19. Each series is independently projected, so they may not exactly sum to the totals. Public school graduates through SY 2012-13 (and enrollments through SY 2018-19) are from the National Center for Education Statistics (NCES) Common Core of Data (https://nces.ed.gov/ccd/). This Technical Appendix provides full data details, including for private school data, which utilize survey-based estimates from NCES Private School Universe Survey (https://nces.ed.gov/surveys/pss/). Specific to Nebraska: Public school graduates for SY 2013-14 to 2018-19 are ESTIMATES COMPUTED BY WICHE (not confirmed total annual graduates) using data about graduates from ninth-grade cohorts that WICHE received in April-July 2020 by request from https://nep.education.ne.gov/ , because Nebraska department of education was not able to provide the requested total annual graduate counts. Estimates based on graduates within 4 to 7 years of their defined ninth grade cohort may be a reasonable approximation of total annual graduates, and the estimates for Nebraska are based on ninth graders graduating within 4 to 7 years. Nebraska private school enrollment estimates for grades 7 to 12 for SY 2017-18 were suppressed due to coefficients of variation >=50%. 2015-16 grade 1 enrollment estimate also exceeded CV of 50%, and was not used; WICHE linearly interpolated this value. So, Nebraska private school enrollment projections for grades 7 to 12 begin with SY 2016-17, whereas grades 1 to 6 begin with SY 2018-19. The private school graduate estimates for Nebraska for SY 2016-17 was flagged in the source data from NCES as having a CV of 30-50%, and the estimated number of graduates could not be confirmed by recent 12th grade count, so this value for SY 2016-17 was not used and Nebraska private high school graduate projections begin with 2015-16.
Nevada	For Nevada: Graduate projections begin SY 2018-19 for Public Schools, SY 2017-18 for Private Schools, and the Grand Total is fully projected beginning SY 2018-19 but includes the projected portion SY 2017-18. Each series is independently projected, so they may not exactly sum to the totals. Public school graduates through SY 2012-13 (and enrollments through SY 2018-19) are from the National Center for Education Statistics (NCES) Common Core of Data (https://nces.ed.gov/ccd/). This Technical Appendix provides full data details, including for private school data, which utilize survey-based estimates from NCES Private School Universe Survey (https://nces.ed.gov/surveys/pss/). Specific to Nevada: Public school graduates for 2013-14 to 2017-18 are ESTIMATES COMPUTED BY WICHE in July 2020 from data at http://nevadareportcard.nv.gov , because Nevada department of education was not able to provide the requested total annual graduates. Estimates based on graduates within 4 to 7 years of their defined ninth grade cohort may be a reasonable approximation of total annual graduates. The Nevada estimates for SY 2013-14 and 2014-15 only capture graduates within 4 years of their defined ninth grade cohort; the estimates for SY 2015-16 to 2017-18 only capture graduates within 5 years of their defined ninth grade cohort. (WICHE was not able to compute a plausible estimate for total graduates in SY 2018-19, from the 4- and 5-year graduation rate data published on the website.) In relation to these being estimates, the public school graduate counts may systematically underreport the number of graduates by a small, but consistent, amount. And, users should keep in mind these are a computed estimate from data that may not be specifically for this purpose.
New Hampshire	For New Hampshire: Graduate projections begin SY 2019-20 for Public Schools total and 2018-19 for race/ethnicities, SY 2017-18 for Private Schools, and the Grand Total is fully projected beginning SY 2019-20 but includes the projected portions SY 2017-18 and 2018-19. Each series is independently projected, so they may not exactly sum to the totals. Public school graduates through SY 2012-13 (and enrollments

through SY 2018-19) are from the National Center for Education Statistics (NCES) Common Core of Data (<https://nces.ed.gov/ccd/>). This Technical Appendix provides full data details, including for private school data, which utilize survey-based estimates from NCES Private School Universe Survey (<https://nces.ed.gov/surveys/pss/>). Specific to New Hampshire: Public school graduates, total, for SY 2013-14 to 2018-19 compiled in April-June 2020 from data for total completers earning standard diplomas at www.education.nh.gov. Estimates of graduates by race/ethnicity obtained from the New England Secondary School Consortium (www.newenglandssc.org), which New Hampshire is a participant to. Race/ethnicity data from NESSC are an estimated total of the 4- to 6-year ninth-grade cohort graduates. Fewer than 11 Native Hawaiian/Other Pacific Islander graduates annually, prior to 2017 (at which point there were 12) so no separate projections are made for them; and, the Asian/Pacific Islander category may be the same or very similar in number to Asian alone category, since the specific number of NH/OPI graduates is not known. Some anomalies observed in public schools total and White graduate counts in 2013-14. Town Tuitioned students/graduates may be counted in both the Public and Private school data. New Hampshire private school enrollment estimates for grades 1 to 8 for SY 2017-18 were suppressed due to coefficients of variation $\geq 50\%$. So, New Hampshire private school enrollment projections for grades 1 to 8 begin with SY 2016-17; grades 9 to 12 still begin with SY 2018-19; and graduate projections still begin with 2017-18.

New Jersey	Public school graduates for SY 2013-14 to 2018-19 compiled in March 2020 from data received by request to opra.custodian@doe.nj.gov .
New Mexico	The data for New Mexico public school graduates for SY 2013-14 to 2018-19 were compiled in July 2020 from two data sources obtained from New Mexico Public Education Department and include ESTIMATES COMPUTED BY WICHE (so that not all years are confirmed total annual graduates). WICHE computed estimates of annual graduates for SY 2013-14 to 2015-16 from cohort graduate data published at https://webnew.ped.state.nm.us/bureaus/accountability/graduation , and used total annual graduate counts provided by NMPED for SY 2016-17 to 2018-19. The estimates for SY 2013-14 to 2015-16, computed from cohort-based graduates-- capture graduates within 4 to 6 years of their defined ninth grade cohort, and as such may be systematically different than a total annual number of graduates by a small, but consistent, amount. And, users should keep in mind these are a computed estimate from data that may not be specifically for this purpose. Further, New Mexico's cohort-based graduation data did not provide counts for Native Hawaiian/Other Pacific Islander and multi-racial students, so WICHE approximated their numbers for SY 2013-14 to 2015-16 based on the proportional rate of these students for SY 2016-17 to 2018-19. See Technical Appendix for full detail about private school data, which utilize survey-based estimates. New Mexico private school estimates for grades 1 to 8 for SY 2017-18 were suppressed due to coefficients of variation $\geq 50\%$, and therefore enrollments for Grades 1 to 8 are projected from SY 2016-17 onward (private school graduate projections still begin with 2017-18).
New York	Public school graduates for SY 2013-14 for 2018-19 received by request in June 2020 from the New York State Education Department. New York reported all grade-level counts of Hawaiian Native / Pacific Islander students ('NHOP') as missing in 2013-14 to 2015-16 Common Core of Data. In the 2013-14 and 2014-15 CCD documentation, NCES reported that it was possible these students were counted in other categories of race/ethnicity. WICHE was unable to determine if they were already counted under Asian (alone) counts, or in Two or more races. Enrollments on NYSED.gov are only available by combined "Asian or Native Hawaiian/Other Pacific Islander" and therefore did not provide the needed substitutions. From the data available in other years, it appears these students were approximately 0.1% of total public students, by grade. Graduate counts by these categories were available from in the data received from NYSED, so WICHE estimated these grade-level enrollments using linear interpolation.
North Carolina	Public school graduates for SY 2013-14 to 2018-19 compiled March to August 2020 from data available in the Statistical Profile at http://apps.schools.nc.gov/ords/f?p=145:1 . WICHE observes about 10% fewer first graders in 2010-11 than in 2009-10 or 2011-12; this reduced starting "cohort" appears to progress with

roughly 10% fewer students through the grade levels. It is reflected in the White and Black enrollments. There is no clarification about this in the NCES CCD documentation, and similar patterns are evident in data available from Statistical Profile at <http://apps.schools.nc.gov/ords/f?p=145:1>. No adjustments were made to these data. Native Hawaiian/Other Pacific Islander (NHOP) graduates were missing/suppressed for 2016-17 and 2018-19; WICHE imputed them using a 5-year average ratio of 12th grade-to-graduates.

North Dakota	Public school graduates for SY 2013-14 to 2018-19 compiled June to August 2020 from data available at https://insights.nd.gov/Education/State/GraduationRate# . Hispanic grade-level enrollments from CCD for 2010-11 were linearly imputed because counts appeared erroneous (decreased from 200s to 20s); these values are only for information and not used for the projections. In graduate data published by the state, two or more races graduate counts were suppressed (<10), so projections are not possible. Hispanic graduates were also suppressed 2013-14 to 2015-16, and WICHE computed estimates of these graduates with linear interpolation. Projections for North Dakota Black public high school graduates were adjusted to minimize a compounding effect that was occurring due to recent observed increases in infants and young school-age children categorized as Black non-Hispanic, which in the projections methodology resulted in implausible multiplication in the number of future Black public high school graduates by 2030. Private school graduates for virtually all years since 2000 are estimated by WICHE, derived as a percentage of 12th graders reflecting an average of 100 percent grade-12-to-graduation progression. Private school graduate counts are not available from the state department of education or the primary NCES source of data for this series.
Ohio	Public school graduates for SY 2013-14 to 2018-19 compiled March to October 2020 from data available at https://reportcard.education.ohio.gov/advanced and https://reports.education.ohio.gov/report/report-card-data-graduate-count-by-school-year-state . WICHE observes historically more reported graduates than the number of 12th graders, consistently, and has received information over the years that Ohio's business rules for enrollments reporting differ from those for Common Core of Data. The membership file of EdFacts is pulled on October 1st, while the Ohio Dept of Education October Headcount is based on data pulled on the Friday of the first full week in October each year. Ohio private school estimates for grades 1 to 8 in SY 2015-16 have coefficients of variation between 34% to 43%, and should be used with caution. But, no adjustments were made for the projections.
Oklahoma	Public school graduates for SY 2013-14 to 2018-19 received in October 2020 through public information request to Oklahoma State Department of Education.
Oregon	Public school graduates for SY 2013-14 and forward received in March 2020 from Oregon Department of Education.
Pennsylvania	Public school graduates for SY 2013-14 to 2018-19 compiled in March to October from data at https://www.education.pa.gov/DataAndReporting/Graduates/Pages/default.aspx . Several grade level estimates for SY 2014-15 and 2015-16 private school enrollments had coefficients of variation between 25% and 32%, and should be used with caution. No adjustments were made for using these values in the projections.
Rhode Island	Public school graduates for SY 2013-14 to 2018-19 compiled in April 2020 from data available at www.eride.ri.gov/reports/reports.asp . Native Hawaiian/Other Pacific Islander graduates were not separately reported in these (website) data. WICHE obtained the separate counts from the New England Secondary School Consortium (www.newenglandssc.org), which Rhode Island is a participant to. Rhode Island private school estimates for SY 2015-16 have coefficients of variation from 28% to 44%, and should be used with caution. But, they have not been adjusted for use in the projections.
South Carolina	Public school graduates for school years 2013-14 to 2018-19 compiled from data received in March 2020 by request to South Carolina department of education, https://scdoe.mycusthelp.com/WEBAPP/_rs/(S(j2xnyqxa3bgckldzhd4z3tc))/supporthome.aspx . WICHE imputed graduates by race/ethnicity for

2014-15, because race/ethnicity detail was not present for 2014-15 graduates in the data received upon request, which South Carolina department of education confirmed was due to an internal state data source that changed in 2014 and prevented reporting of this detail.

South Dakota	Public high school graduates for 2014-15 to 2018-19 compiled in March 2020 from data available at https://doestatereporting.sd.gov . It appears these data WICHE were referred to, include GED recipients (by age 21). WICHE is unable to determine what amount more this might be than if the data included only standard/regular diploma recipients from high schools. Native Hawaiian/Other Pacific Islander graduate counts were redacted/suppressed in the source data for all but 2017-18, and therefore no projections are made for them; and, the Asian/Pacific Islander category may be the same or very similar in number to Asian alone category, since the specific number of NH/OPI graduates is not known. WICHE linearly interpolated public school statewide graduate counts for 2013-14 since these were not available from the South Dakota department of education; these values are for information and not critical in the projections methodology. WICHE observes an increase of 10 to 50% in the number of South Dakota public school students per grade, who are categorized as multiracial, between SY 2017-18 and 2018-19. There was no basis for altering these data, so they were not adjusted; but this becomes a multiplier effect in the methodology, which might be projecting an implausible increase in the number of multiracial South Dakota graduates. Graduate count for 2014-15 was not available from NCES data source, so the values for both the normally imputed years (2011, 2013 and 2015) and this missing year (2014) are estimated/computed using the average historical ratio of grade 12 to graduates (95 percent).
Tennessee	Public school graduates for school years 2013-14 to 2018-19 received in May 2020 from request to https://www.tn.gov/content/tn/education/data/data-downloads/request-data.html . WICHE observes that the Two or more races values for 2013-14 and 2015-16 are implausible, but was not able to adjust them due to insufficient prior data (this might slightly affect the first projected year). Also, the data received by request looks virtually the number that would be estimated for on-time graduates from Tennessee published annual statistical reports, but from WICHE's analysis it seems more likely the on-time estimated number is high, than that the total annual graduates are off; so no adjustment is made.
Texas	Public school graduates for SY 2013-14 to 2018-19 compiled April to November 2020 from data available at https://tea.texas.gov/texas-schools/accountability/academic-accountability/performance-reporting/texas-academic-performance-reports .
Utah	Public school graduates for SY 2013-14 and forward received in May 2020 from request to https://www.schools.utah.gov/data .
Vermont	For Vermont: Graduate projections begin SY 2016-17 for Public Schools, SY 2017-18 for Private Schools, and the Grand Total is fully projected beginning SY 2017-18 but includes the projected portion SY 2016-17. Each series is independently projected, so they may not exactly sum to the totals. Public school graduates through SY 2012-13 (and enrollments through SY 2018-19) are from the National Center for Education Statistics (NCES) Common Core of Data (https://nces.ed.gov/ccd/). This Technical Appendix provides full data details, including for private school data, which utilize survey-based estimates from NCES Private School Universe Survey (https://nces.ed.gov/surveys/pss/). Specific to Vermont: Public school graduates for SY 2013-14 to 2015-16 are data provided in July 2020 by the New England Secondary School Consortium (www.newenglandssc.org), which Vermont is a participant to. Data from NESSC may not be a total annual number of graduates, because they represent a sum of cohort-based ninth graders who graduated within 4 to 6 years; but NESSC analysis indicates these are virtually all those who would graduate annually from public schools. Vermont counts students who select multiple race/ethnicities in every category they select, rather than having a Multiracial/Two or More Races category, but the NESSC provides an estimate/count for multiracial students, so the sum of races/ethnicities may exceed the public school total. Projections were not possible due to unusually small numbers and data suppression of American Indian/Alaska Native (average of 23 12th graders in recent years) and Native Hawaiian/Other

Pacific Islander graduates (average of 6 12th graders in recent years), and occasionally birth counts. WICHE was not able to isolate the publicly funded students of Vermont’s town tuitioning program who attend and graduate from a public-serving private school. But by WICHE estimates, Vermont’s grand total of public and private graduate counts (and projections) might be overstated by up to 10 percent due to likely duplication of these students in the public and private school data (WICHE estimate from compiled data and correspondence with Vermont Student Assistance Commission).

Virginia	Public school graduates for SY 2013-14 and forward compiled in March 2020 from data available at http://www.doe.virginia.gov/statistics_reports/research_data/index.shtml#grad .
Washington	Public school graduates for SY 2013-14 to 2018-19 are ESTIMATES COMPUTED BY WICHE (not confirmed total annual graduates) using data about graduates from ninth-grade cohorts, which WICHE was pointed to at https://www.k12.wa.us/data-reporting/data-portal?combine=report%20card%20graduation in May 2020; because Washington state department of education was not able to provide the requested total annual graduate counts. Estimates based on graduates within 4 to 7 years of their defined ninth grade cohort may be a reasonable approximation of total annual graduates. The estimates for SY 2016-17 to 2019-20 include graduates within 4 to 7 years of ninth grade; estimates for 2013-14 to 2015-16 include reported graduates within 5 to 6 years of ninth grades, and WICHE estimates of graduates within 6 to 7 years based on the rates 2016-17 to 2019-20. Several grade level estimates for SY 2013-14 private school enrollments had coefficients of variation between 26% and 50%, and should be used with caution. No adjustments were made for using these values in the projections.
West Virginia	Public school graduates for SY 2013-14 to 2018-19 received by request from West Virginia department of education (https://wvde.us/) in June 2020. Graduate counts for American Indian/Alaska Native and Native Hawaiian/Other Pacific Islander graduates were redacted in the received data for counts fewer than 30 (AI/AN) and 10 (NH/OPI), so no projections are made for these categories; and the Asian/Pacific Islander category may be the same or very similar in number to the Asian alone category, since the specific additional number of NH/OPI graduates is not known.
Wisconsin	Public school graduates for SY 2013-14 to 2018-19 compiled in March 2020 from data obtained from http://wisedash.dpi.wi.gov/Dashboard/portalHome.jsp . Wisconsin private school grades 9 to 12 enrollment estimates and graduate estimates for SY 2013-14 were suppressed from the projections due to coefficients of variation $\geq 50\%$. Coefficients of variation for SY 2013-14 grades 1 to 8 private school estimates were also between 30% and 43%, but were not adjusted.
Wyoming	Public school graduates for SY 2013-14 to 2018-19 compiled March to August 2020 from data available at https://edu.wyoming.gov/data/statisticalreportseries-2/ . WICHE observed that the data for total annual graduates are almost exact in number to AGCR estimated on-time graduates. Wyoming.edu contact confirmed that the data used for total annual graduates do meet the definition we sought. Private school graduates are estimated by WICHE due to data not being available from the state, and these data being suppressed in NCES Table 15 due to data inadequacy, graduates have been derived as a percent of 12th graders for virtually all years since 2000, reflecting an average of 107 percent grade-12-to-graduation progression.