# 2024 Dashboard Technical Guide:SCIENCE INDICATOR

Indicators Covering Grade Five, Grade Eight, and High School



Prepared by the California Department of Education

Available on the CDE [California School Dashboard](https://www.cde.ca.gov/dashboard)

[and System of Support](https://www.cde.ca.gov/dashboard) Web Page.

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### About this Mini-Guide, Resources, and Contacts

#### About this “Mini-Guide”

The California School Dashboard (Dashboard) Technical Guide provides technical information on California’s accountability system, specifically the state and local indicators reported on the Dashboard. The guide is divided into multiple sections, or mini-guides, to allow viewers to download only the topics of interest. The focus of this mini-guide is on the Science Indicator. However, to ensure that you do not **miss important information and business rules** pertaining to the entire Dashboard, we encourage you to review as many of these mini-guides as possible:

* Access the full guide through the [California Department of Education](https://www.cde.ca.gov/ta/ac/cm/dashboardguide24.asp) (CDE)web page.

#### Resources

* The [Science Indicator](https://www.cde.ca.gov/ta/ac/cm/dashboardscience.asp) web page offers all resources related to this state indicator.
* The [Dashboard Communications Toolkit](https://www.cde.ca.gov/ta/ac/cm/dashboardtoolkit.asp) was developed to support local educational agencies (LEAs), parents and communities bring the Dashboard closer to home.
* The [Dashboard Resources](https://www.cde.ca.gov/ta/ac/cm/dashboardresources.asp)web page contains general and technical information, tools for educators, translations, and downloadable data files.

#### Contacts

Questions about:

* State indicators (Academic, Chronic Absenteeism, College/Career, English Learner Progress, Graduation Rate, Suspension Rate, and Science), contact the Analysis, Measurement, and Accountability Reporting Division by email at Dashboard@cde.ca.gov.
* Local indicators, logging onto the Dashboard, submitting local indicators into the Dashboard, and the Local Control and Accountability Plan (LCAP), contact the Local Agency Support Systems Office (LASSO) by email at LCFF@cde.ca.gov.
* Smarter Balanced Summative Assessment, California Science Test, and the California Alternate Assessments, contact the California Assessment of Student Performance and Progress (CAASPP) Office by email at caaspp@cde.ca.gov.
* California’s System of Support (Differentiated Assistance and Comprehensive School Support), contact the System of Support Office (SSO) by email at CASystemofSupport@cde.ca.gov.
* California Longitudinal Pupil Achievement Data System (CALPADS), contact the CALPADS-CSIS Service Desk at calpads-support@cde.ca.gov.

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###

### Introduction

#### What is this Indicator?

**The California Science Test (CAST) and the California Alternate Assessment for Science (CAA)** will be **included** in the Science Indicator for the first time on the 2024 Dashboard. The Dashboard will show results on the CAST, as well as the Distance From Standard change from the previous year. The Science measure will not be used for accountability on the 2024 Dashboard. The CDE has continued to apprise the State Board of Education (SBE) as to when it may be feasible to include Science for accountability.

#### Who will receive a Science Indicator?

For the 2024 Dashboard, LEAs, schools, and student groups that have **11 or more *continuously enrolled\* students*** in the denominator of their Distance from Standard (DFS) will receive a DFS status and change results on their Dashboards. A performance level (or color) will not be displayed on the 2024 Dashboard for Science. The Science Indicator will not be used for accountability purposes for the 2024 Dashboard.

*\*“Continuous enrollment” is defined as enrollment from Fall Census Day [first Wednesday in October] to when the student first logged on to the test (CAST or CAA for Science]) without a gap of more than 30 consecutive calendar days.*

Refer to the section titled “Calculating the DFS” for further information about DFS and continuous enrollment.

##### When there are Fewer than 11 Students

When there are **less than 11 students,** no data (i.e., Status, Change,) are displayed on the Dashboard to protect students’ privacy.

More information on when LEAs and schools are held accountable are available in the *California’s Accountability System and the Dashboard*, *Local Educational Agency Eligibility: Differentiated Assistance*, and *Every Student Succeeds Act School Support* mini-guides available on the CDE [Dashboard Technical Guide](https://www.cde.ca.gov/ta/ac/cm/dashboardguide24.asp) web page.

#### What is the Data Source?

Results of the California Science Test (CAST), and the California Alternate Assessment (CAA) for grade five, grade eight, and once in high school (10, 11, 12th grades), are received from the testing vendor (Educational Testing Service [ETS]). However, note that enrollment data used for continuous enrollment and student group determinations are not taken from the file received from ETS. Rather, these data are taken from CALPADS. For more information on student group determinations, please view the *California’s Accountability System and the Dashboard* mini-guide posted on the CDE [Dashboard Technical Guide](https://www.cde.ca.gov/ta/ac/cm/dashboardguide24.asp) web page.

#### Differences between CAASPP and Dashboard

Statewide testing data are reported on both the Test Results for California Assessments and the Dashboard. However, because different business rules are applied during the calculation process, the results may differ between the two reports. This section explains these differences.

##### Percent of Students in Each Achievement Level versus Distance from Standard

The [Test Results for California's Assessments](https://caaspp-elpac.ets.org/caaspp/) website reports the number and percent of students in each achievement level (i.e., four levels for the CAST and three levels for the CAA for Science). These results are based on all students who took the test regardless of the number of days enrolled at the tested entity. On the other hand, the Dashboard reports the DFS, which measures the average distance from the Standard Met Achievement Level (i.e., Level 3) for *all students who are continuously enrolled*.

##### Test Completion Rates versus Participation Rates

Under CAASPP, LEAs can access test completion rates, which are based on the *total* number of students who took a test at a given school. These completion rates are **not** the same as the participation rates that are calculated for the Dashboard.

The participation rate for the Dashboard only includes students enrolled during the “accountability testing window”. This accountability window includes the application of grace periods, which hold an LEA/school harmless when there is inadequate time to administer the assessments.

Additionally, ESSA requires 95 percent participation in the ELA and Mathematics assessments. Therefore, if the 95 percent participation goal is not met, the DFS will decrease since the number of students needed to bring the participation rate of the LEA, school, or student group up to 95 percent are assigned the Lowest Obtainable Scale Scores [LOSS] and added to the DFS. Note that the added LOSS scores do not affect individual CAASPP student score reports or in the CAASPP Student Score Data File. The addition only occurs when the CDE calculates the average DFS for the Dashboard Academic Indicators.

However, science is not a part of the ESSA 95 percent participation rate requirement. The Science indicator will not apply a LOSS to the DFS of an LEA, school, or student group for the 2024 Dashboard. However, the SBE decided to apply the 95 percent participation rate requirement starting with the 2025 Dashboard.

##### District of Residence (or District of Special Education Accountability [DSEA])

Students with disabilities (SWDs) oftentimes receive services from another LEA, special education school, or non-public school (NPS). Under CAASPP aggregate reporting rules that are used for the Test Results for California's Assessments website, test results are sent back (or reported within) the district of residence (or District of Special Education Accountability [DSEA]) **only** if the student is enrolled at an NPS. However, for the Dashboard, all SWD test results are sent back (or reported within) their district of residence. Therefore, the district where the student geographically resides is held accountable for their assessment outcomes and that data is included in that district’s Science Indicator.

Note that this rule is only applied at the LEA-level and not at the school-level. All schools where the SWD attends are held accountable for the students’ performance. For further details of this rule, refer to the *District of Residence Rule for Students with Disabilities* flyer posted on the CDE [Dashboard Communications Toolkit](https://www.cde.ca.gov/ta/ac/cm/dashboardtoolkit.asp) web page.

### Science Rules

#### *Participation Rate*

###### *Who Is Held Responsible for Meeting the 95 Percent Participation Rate Goal?*

LEAs and schools (including charter and DASS schools) that serve students in grades five, eight, and high school, as well as student groups represented in these grade levels, will not be held responsible for meeting the 95 percent participation goal for the Science Indicator on the 2024 Dashboard. However, the SBE has decided that starting with the 2025 Dashboard, all educational entities will be held responsible to meet the 95 percent participation goal. Participation rate data will be reported as a part of the additional reports.

###### *Calculating the Participation Rate*

To be included in the participation rate calculations, the student must be:

* **Enrolled** during the accountability testing window (as defined later) AND
* **Tested** on either the CAST or the CAA for Science

**Participation Rate Formula**

Total Number of Students Tested (CAST and CAA for Science)

**divided by**

Total Number of Students Enrolled During the Accountability Testing Window

**Rounding Rule:** The ED requires the use of standard rounding. Therefore, a participation rate of 94.1 percent will be rounded down to 94 percent. A participation rate of 94.5 percent will be rounded up to 95 percent.

###### *Participation Rate Denominator: Enrolled*

**All** students who are enrolled during a school's determined accountability testing window are **included** in the enrolled count (i.e., included in the participation rate denominator). Because students transfer in and out during the testing window, specific rules have been set for the Dashboard to help determine which students should be included in the participation rate denominator and which students should be excluded. ELA/Mathematics and Science each have separate accountability testing windows, and students in high school will have a Science Indicator accountability window that includes the entire academic year. The rules for the Science Indicator are explained below.

###### Determining the Science Indicator Accountability Testing Window

Determining a school’s Science Indicator accountability testing window is one of the first steps taken to finalize the LEAs and school denominator for students in grades five and eight. Although LEAs set their own testing window for the CAST, and CAA for Science in the TOMS Test Administration Setup module the following steps are taken to determine a school’s accountability testing window:

###### Step 1: Determine the Start of a Testing Window

For purposes of the Dashboard, the testing window start date is when the first student at a school (or track) logged on to a test. The first log on could be for either a CAST or CAA for Science.

###### Step 2: Determine the End of the Testing Window

The testing window end date is the end date of the window set by the LEA CAASSP Coordinator in the TOMS Test Administration Setup module.

###### Step 3: Apply Grace Periods

Because some students **transfer in or out** during a school's determined testing window, **grace periods** were developed. These grace periods apply only to certain students who transfer in and/or out within the start and end dates and hold schools harmless when there is inadequate time to administer the assessments.

Depending on the length of the window determined through Steps 1 and 2 above, one or two grace periods are applied. These grace periods are "calendar days", meaning that weekends and holidays are included in the count. The following rules are used to apply grace periods:

***Number of Days Between Start and End Date is 1 to 14 Calendar Days***

Schools that have 1 to 14 calendar days within the start and end dates do not have any grace periods. In this instance, the 14 days (or fewer) is the accountability testing window.

***Number of Days Between Start and End Date is 15 to 30 Calendar Days***

Schools with 15 to 30 calendar days within the start and end dates have one 14-day grace period applied at the end of the accountability testing window (i.e., 14 days **before** the window ends, which includes the very last day of the window).

***Number of Days Between Start and End Date is 31 or More Calendar Days***

Schools with 31 or more calendar days within the start and end dates have two 14-day grace periods: one at the beginning of the accountability testing window (i.e., 14 days **after** the start date, including the very first day of the window) and one at the end of the accountability testing window (i.e., 14 days before the end date, which includes the very last day of the window).

###### Step 4: Determine the Accountability Testing Window

The accountability testing window is the period between the two grace periods. Figures 1, 2, and 3illustrate the differences between the testing window, grace periods, and accountability testing window depending on the number of days between the start and end dates (i.e., 1–14 days, 15–30 days, and 31 or more days).

**Figure 1: How to Determine the Accountability Testing Window when Start and End Date is 1 to 14 Calendar Days** (Refer to [Appendix C](#AppenAFig3) for the figure’s descriptive text.)



**Figure 2: How to Determine the Accountability Testing Window when Start and End Date is 15 to 30 Calendar Days** (Refer to [Appendix C](#AppenAFig4) for the figure’s descriptive text.)



**Figure 3: How to Determine the Accountability Testing Window when Start and End Date is 31 or More Calendar Days** (Refer to [Appendix C](#AppenAFig5) for the figure’s descriptive text.)



**Who Is Held Responsible When Students Transfer?**

Students who do not test are excluded or included in a school's participation rate based on when the student transferred in or out. While this is detailed in Table 1 through student scenarios, the following statement helps simplify when schools are held accountable:

Referencing Figures 1, 2, and 3, any student who was enrolled for at least one day during the accountability testing window is included in that school’s participation rate (i.e., included in the participation rate denominator) and therefore, the school is responsible for testing the student.

Note that the enrollment information is taken from the CALPADS Student Enrollment (SENR) file.

**Table 1: Scenarios of When Students are Included or Excluded from the Participation Rate**

| **Example** | **Jefferson City****Junior High (JCJH)** | **Carson City Middle School (CCMS)** | **Participation Rate Determination** |
| --- | --- | --- | --- |
| 1 | Student exits during the beginning grace period and never enrolls at another school. The student has not yet taken the CAST or the CAA for Science. | (Does Not Enroll) | Due to the grace period applied at the beginning of testing, the student **will not be included** in JCJH’s participation rate (neither in the denominator nor the numerator). |
| 2 | Student exits during the accountability testing window and never enrolls at another school. The student has not yet taken any of the CAST or the CAA for Science. | (Does Not Enroll) | Because the student exited JCJH during the accountability testing window and never enrolled in another school, the student **will be included** in JCJH’s denominator for the science participation rate. However, the student **will not be included** in the numerator since the student did not participate in the assessments. |
| 3 | Student completes CAST or the CAA for Science, and exits during the accountability testing window. | Student enrolls during the accountability testing window. | Because the student completed the CAST or the CAA for Science at JCJH, the student **will be included** in JCJH’s science participation rate (in both the numerator and denominator). |
| 4 | Student exits during the accountability testing window. The student has not yet taken the CAST or the CAA for Science. | Student enrolls during the end grace period and does not take any tests. | Because the student enrolled at CCMS during the end grace period, the student **will** **not be included** in CCMS’s participation rates.However, the student **will be included** in the denominator of JCJH’s science participation rate because the student was enrolled during the accountability testing window. The student **will be excluded** from the numerator because the student did not take any tests. |
| 5 | Student exits during the accountability testing window. The student has not yet taken the CAST or the CAA for Science. | Student enrolls during the accountability testing window and completes all assessments. | Because the student enrolled at CCMS during the accountability testing window, CCMS is responsible for administering the CAST or the CAA for Science to the student. The student **will be** **included** in CCMS’s science participation rate.However, the student **will not be included** in the denominator of JCJH’s science participation rate. |
| 6 | Student exits during the accountability testing window. The student has not yet taken the CAST or the CAA for Science. | Student enrolls during the accountability testing window and does not take the CAST or the CAA for Science. | The student **will be included** in the denominator of CCM’s science participation rate because the student was enrolled during the accountability testing window.The student **will not be included** in the denominator of JCJH’s science participation rate. |
| 7 | Student completes three domains of the CAA for Science but exits during the accountability testing window before completing the fourth domain. | Student enrolls during the accountability testing window and completes the fourth domain of the CAA for Science. | Because the student enrolled at CCMS during the accountability testing window, CCMS is responsible for administering the fourth domain of the CAA for Science. The student **will be** **included** in CCMS’s science participation rate.The student **will not be included** in the denominator of JCJH’s science participation rate. |
| 8 | Student completes two domains of the CAA but exits during the beginning grace period before completing the remaining CAA domains. | Student enrolls during the beginning grace period, but does not complete the remaining two domains of the CAA. | Because the student enrolled at CCMS during the beginning grace period, CCMS is responsible for administering remaining domains of the CAA to the student.The student **will not be included** in the denominator of JCJH’s science participation rate. |
| 9 | Student completes two domains of the CAA and exits during the accountability testing window. | (Does Not Enroll) | Because the student exited JCJH during the accountability testing window and never enrolled in another school, the student **will be included** in JCJH’s denominator for the science participation rate. However, the student **will not be included** in the numerator since the student did not complete all four domains of the CAA. |
| 10 | Student completes two domains of the CAA. | Student enrolls during the beginning grace period and completes only one domain of the CAA | Because the student enrolled at CCMS during the beginning grace period, CCMS is responsible for administering the remaining domains of the CAA.For the science rate, the student **will be** **included** in denominator for CCMS. However, the student **will not be included** in the numerator since the student did not complete all four domains of the CAA. |

**Multi-track Year-Round Schools**

Multi-track year-round schools have an accountability testing window determined for each track. For example, Diamond Elementary School has three tracks:

* **Track 1** started on April 3 and ended on May 26. The first student who started testing was on May 18. Therefore, the accountability testing window for Track 1 starts on May 18. Because the calendar days between May 18 to May 26 are fewer than 14 calendar days, there are no grace periods applied.
* **Track 2** started on April 4 and ended on June 26. The first student who started testing was on May 10. Therefore, the accountability testing window for Track 2 starts on May 10. Because the calendar days between May 10 to June 26 is more than 31 calendar days, one 14-day grace period is applied at the beginning of the accountability testing window and one 14-day grace period is applied at the end of the accountability testing window.
* **Track 3** started on May 8 and ended on June 26. The first student who started testing was on June 6. Therefore, the accountability testing window for Track 3 starts on June 6. Because the calendar days between June 6 to June 26 is between 15 to 30 calendar days, one 14-day grace period is applied at the end of the accountability testing window.

**High School Participation Rate**

Unlike the ELA and Mathematics assessments which are administered in a specific high school grade, grade 11, the Science assessment can be administered to students in either grades 10, 11 or 12. To report on the participation rate and Distance from Standard, the SBE made the decision to combine current year high school scores. For example, the Science Indicator participation rate numerator for the 2024 Dashboard will include all 10th graders, 11th graders, and 12th graders who tested in 2023–24 who meet the participation rate eligibility requirements. The denominator for the 2024 Dashboard will include all 10th and 11th graders who tested and all 12th graders who meet the participation rate eligibility requirements.

**High School Participation Rate Formula**

Total Number of 10th, 11th, and 12th Grade Students Tested (CAST and CAA for Science)

**divided by**

Total Number of 10th and 11th Grade Students who tested in the Current Year and All Enrolled 12th Grade Students who meet the Participation Rate Eligibility Requirements

**Automatic Exclusion from the Participation Rate**

In some cases, students are automatically excluded from the participation rate denominator. This applies to students who have CAST or CAA records in the Test Operations Management System [TOMS].

* Students who are absent from testing due to a **significant medical emergency** and are flagged with the medical emergency condition code “not tested due to significant medical emergency” (condition code NTE) on the CAASPP file, are automatically removed from the participation rate calculations.

Per *California Code of Regulations,* Title 5, medical emergency is defined as: “a significant injury, trauma, or illness (mental or physical) that precludes a pupil from taking the achievement tests. An injury, trauma, or illness is significant if the pupil has been determined by a licensed physician to be unable to participate in the tests”.

However, if the student logged onto the test, the student will be included as follows in the participation rate:

* For CAST and CAA for Science, any student who logs on to all domains of the test is counted as participation (in the numerator) in the participation rate, regardless of the student’s condition code.

**English Learners and the Participation Rate**

English Learner students (regardless of whether they have been enrolled in a U.S. school for less than one year) are ***expected to take the*** Science assessments and will be ***included in the Science*** **participation rate**.

**Parent Waivers DO NOT Exempt Students from the Participation Rate**

Students who do not take the CAST or CAA for Science due to a parent waiver are still **included in the denominator of the participation rate.** These students are, however, **excluded from the numerator,** meaning that they are counted as “not participating”. If a student is excluded from the numerator, the exclusion would contribute to a lower participation rate for the school.

###### *Participation Rate Numerator: Tested*

To be considered as "participating", and included in the numerator as tested, a student must:

* Be enrolled during the accountability testing window and
	+ Log on to the CAST, or
	+ Log on to all four domains for the CAA for Science

For example, for the CAA for Science test, if a student logs on to the one domain and not on the other three domains, the student would be counted as "not participating" in the CAA for Science and excluded from the numerator. Students need to log on to all four domains to be counted in the numerator for the CAA for Science.

**Accommodations, Accessibility Resources, and Unlisted Resources**

Students who are assigned an accessibility resource (designated support or accommodation) on the California Science Test are included in the calculation of the participation rate (as well as the average DFS calculation).

Students who use an unlisted resource that changes the construct of the CAST are considered as “not tested” for the participation rate. Therefore, these students are excluded from the numerator and included in the denominator of the participation rate. (Because these students are excluded from the numerator of the participation rate, they are excluded from the calculations of the DFS.)

###### *How are LEA-Level Participation Rates Calculated?*

An LEA’s participation rate is calculated by aggregating all of its schools’ participation rate data (i.e., all the schools’ enrolled and tested students are aggregated to the LEA level). The following specifies the rules used:

* Because **all** **charter schools** are treated as LEAs under the Local Control Funding Formula (LCFF), their data (participation rate and DFS) are not included in their authorizing agencies’ participation rates.
* **DASS schools**’ data are included in their LEAs’ Dashboard report for each state indicator. Therefore, their participation data (and DFS) **are included** in their LEAs’ participation rates and DFS.
* At the *LEA-level only*, an additional step—application of the **district of residence rule**—is taken to determine which students with disabilities (SWDs) are enrolled and included in the denominator of an LEA’s participation rate. This rule is *not applied* at the school-level. All schools are held accountable for the students they serve (i.e., the schools where the students attend). The next section further details this rule.

**District of Residence**

At the **LEA-level** **only,** SWDs may be included in the denominator of a district other than their tested district if they have a District of Special Education Accountability or **DSEA** in the CALPADS SPED file (field #14.16). These SWDs are included only if they meet the denominator inclusion rules detailed earlier.

* *Example:* Pearl Unified sent Xiu, a grade eleven student, to Citrine County Office of Education (COE) to ensure that she received appropriate Special Education services. She was enrolled at Citrine COE for the entire 2023–24 school year and completed the CAA during the LEA’s 2024 testing window. The DSEA field in CALPADS (SPED file; field #14.16) identified Pearl Unified as the DSEA. Because Xiu was enrolled at Citrine COE for the entire accountability testing window and completed the CAA, her assessment data is “sent back” to Pearl Unified. Therefore, Xiu is included in the numerator and denominator of Pearl Unified’s participation rates and not in Citrine COE’s participation rates.

For complete steps on how to request and download the DSEA extract, please refer to the CALPADS [User Manual District of Special Education Accountability (DSEA) Extract](https://documentation.calpads.org/Extracts/DSEAExtract/#district-of-special-education-accountability-dsea-extract) web page. Note that the CALPADS extract is data taken from the Operational Data Store (ODS), which reflects the most updated data submitted by LEAs. Because the DSEA data used for the Dashboard is extracted at the close of EOY, it is a snapshot (“point in time”) data and may not match the DSEA extract that includes any updates that may have been made to the data by the LEA since the close of EOY.

Further information about the District of Residence rule is available in the: (1) Introductory mini-guide, California’s Accountability System and the Dashboard, which is available on the CDE [2024 Dashboard Technical Guide](https://www.cde.ca.gov/ta/ac/cm/dashboardguide24.asp) web page, (2) the [*CALPADS to Dashboard Handbook*](https://www.cde.ca.gov/ta/ac/cm/dashboardresources.asp#handbookcalpads), and (3) the CDE [*District of Residence Rule for Students with Disabilities*](https://www.cde.ca.gov/ta/ac/cm/documents/districtresidencerule24.pdf) flyer.

#### *Distance from Standard (DFS)*

The DFS represents the “distance” between a student’s score on the California Science Test and the Standard Met Achievement Level threshold (i.e., the lowest threshold scale score for Level 3). Figure 4 illustrates this concept.

An average DFS (or an average of all the distances) is calculated at the LEA, school, and student group levels. This average is then used to determine the Performance Levels (or colors) for each level.

**Figure 4: How the DFS is Calculated for Each Student** (Refer to [Appendix C](#AppenAFig6) for the descriptive text.)



##### Which Content Areas Are Used to Calculate DFS?

**The CAST and the Science CAA** are used to calculate the DFS at the LEA, school, and student group levels.

#### *Calculating the DFS*

To be included in the DFS calculations:

* The **tested** student must be **continuously enrolled.** Students who are ***not*** continuously enrolled **are automatically removed** from the calculations.

“Continuous enrollment” is defined as enrollment from Fall Census Day [first Wednesday in October] to when the student logged on to the test without a gap of more than 30 consecutive calendar days.

Therefore, a student who enrolls in a school or LEA ***after*** Fall Census Day is considered not continuously enrolled and is excluded from the DFS.

The continuous enrollment calculation is conducted separately at the school and LEA level. Thus, a student may not be continuously enrolled at a school but could be continuously enrolled at the LEA.

##### Distance from Standard Calculation Formulas

The aggregated Science Indicator DFS calculation for all schools and LEAs is shown below. The Science Indicator DFS calculation on the 2024 Dashboard does not have separate calculations for different grade spans.

**Science DFS Formula for all Schools and LEAs**

Sum of All Continuously Enrolled Grade 5 ***and*** Grade 8 ***and*** High SchoolStudents\*’ Distance from Standard on the 2023–24 CAST or CAA Science Scores

**divided by**

Total Number of Continuously Enrolled Grade 5 ***and*** Grade 8 ***and*** High SchoolStudents\* 2023–24 CAST or CAA Science Scores

\* High school students include 10th graders, 11th graders, and 12th graders who tested in 2023-24 and meet DFS eligibility requirements.

#### *DFS Denominator: Valid*

**All** students who test and are continuously enrolled are **included** in the denominator of the DFS. These student records are also known as “valid”.

#### Automatic Exclusion

However, some students are automatically excluded from the DFS calculations. These students’ data do not impact the Science Indicator for the LEA, school, or student group. The following bullets identify the automatic exclusions:

* Students who are absent from testing due to a significant **medical emergency** and are flagged with the medical emergency condition code on the CAASPP file, **are not included** in the DFS calculation. Student records marked as “not tested due to significant medical emergency” (condition code NTE) are automatically removed unless the student logged onto the test.
	+ Any student who logs onto CAST or logged on to all four domains of the CAA, or logged on to CAST, and is continuously enrolled, are included in the calculations of the DFS regardless of the student’s condition code. *This rule applies to the CAST and the CAA for Science.* (For the definition of medical emergency, refer to the earlier section titled “Automatic Exclusion from the Participation Rate”.)
* **English Learners (ELs) new to the country** and who have been enrolled in a U.S. school for less than one year are **excluded** from the calculations of the DFS, even if the student opted to take one or all parts of the assessments. Therefore, for accountability purposes, any EL newcomer who enrolled in a U.S. school ***after* April 15, 2023**, **are not included** in the DFS calculations for the CAST and CAA for Science

##### Do Parent Waivers Exempt Students from the DFS Calculations?

Students who do not take the CAST or the CAA for Science due to a parent waiver **are excluded** from the calculations of the DFS.

##### Testing Irregularities (Cheating)

Students who have a testing irregularity (e.g., cheating) are assigned the grade-level appropriate LOSS for purposes of calculating the DFS for the Dashboard. For example, if the testing irregularity was for a CAST grade eight test, then the student is assigned the grade eight CAST LOSS score (-65). However, note that the student does not receive a LOSS on the CAASPP student score report.

#### *DFS Numerator: CAST Assessments*

As noted earlier, the DFS represents “the distance” of a student’s score on the CAST and the Standard Met Achievement Level threshold (i.e., the lower threshold of the scale score range for Level 3). All available scale scores are used to provide a more precise measure of an LEA and school’s status and progress.

The DFS for each student in the denominator is calculated separately and then all the students’ “distances” are summed and divided by the total number of continuously enrolled students to determine an average DFS for each LEA, school, and student group as illustrated in Figure 5 below. The DFS shows which areas need improvement and the extent to which the average student score falls short of, or exceeds, the Level 3 threshold.

**Figure 5: Calculating the Average DFS for a LEA, School, or Student Group** (Refer to [Appendix C](#AppenAFig7) for the descriptive text.)

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Because the scale score ranges for the CAST vary by grade level, it is important to compare each student’s Science scores against the Level 3 scale score for the appropriate grade. These scale score ranges are available in Appendix A. For example:

* In grade five, the scale scores for Science range from 150 to 250. Within each range, there are four distinct achievement levels as referenced in Table 2.

**Table 2: Grade Five Scale Score Range for the California Science Test**

| **Achievement****Levels** | **Level 1:****Standard****Not Met** | **Level 2:****Standard****Nearly Met** | **Level 3:****Standard****Met** | **Level 4:****Standard****Exceeded** |
| --- | --- | --- | --- | --- |
| **Grade 5 Science****Scale Score Ranges** | 150–178 | 179–213 | **214**–230 | 231–250 |

As noted in Table 2:

* For Grade 5 Science, the lowest scale score for Level 3 in grade five is 214. Each grade five Science assessment score is compared against this fixed point to calculate the DFS.

Table 3 provides examples of how the DFS is calculated for the California Science Test.

**Table 3: Examples of Calculating the DFS for Grade 5 Student**

| **Student** | **Student’s Score on the California Science Test** | **California Science Test Scale Score Range for Level 3** | **Distance from Standard** |
| --- | --- | --- | --- |
| Grade 5 | Science Score: 182  | Science Scale Score Range: **214**–230 | 182 ***minus*** 214 = -32 pointsThe student scored points 32 **below** the lowest possible Level 3 scale score in Grade 5 Science. The DFS is **negative** 32 points. |

##### No Scale Score on the California Science Test

Students who have a record in the CAASPP file but do not have a scale score result will automatically be assigned the minimum scale score for their grade level. This means that they are assigned the LOSS at the Standard Not Met level.

* For example, a student in grade five who logged onto the CAST, was continuously enrolled, and did not answer enough questions would not have a scale score for science. This student would automatically receive a score of 150, which is the lowest possible score for grade five Science. A scale score of 150 is used to calculate the student’s DFS.

#### *DFS Numerator: California Alternate Assessment for Science*

Because the ED requires the inclusion of the CAA results in the calculation of the DFS, in September 2019, the SBE approved the calculation methodology on how to include these assessments into the DFS.

Unlike students who take the CAST (who are placed in **one of** **four achievement levels**), students who take the CAA for Science are evaluated against their level of understanding in **one of three achievement levels** related to alternate achievement standards linked to the CA CCSS.

The complete scale score ranges for the CAA for Science are available in Appendix B. Note that the scale score ranges for CAA for Science and the CAST are different.

After reviewing three different approaches to incorporating the CAA for Science results into the DFS calculations, in September 2019, the SBE approved the “top-of-the-range” approach:

* **Top-of-the Range:** For levels 1–3 on the CAA for Science, a student’s CAA score would be substituted with the top score point for the same CAST achievement level.
	+ *Example*: A grade eleven student scoring anywhere in Level 2 on the CAA for science would receive a score of 614, which is the highest Level 2 CAST score for high school Science. This CAST score would then be used to calculate the student’s DFS by comparing the student’s score against the lowest Level 3 scale score for high school science, which is 615. For example:

614 (CAA student’s substituted CAST score) *minus 615* (high school CAST lowest scale score) = -1 or 1 point below Standard

Table 4 below is an example of converting high school CAA scores to high school CAST scores.

**Table 4: High School CAA for Science to High School CAST Conversion**

| **Science** |
| --- |
| Level 1 is converted to 575 |
| Level 2 is converted to 614 |
| Level 3 is converted to 635 |

##### No Scale Score and LOSS on the California Alternate Assessments

CAA records in the CAASPP file that reflect a LOSS or no scale score are automatically removed from the DFS calculations. This is because the vast number of students with a LOSS score are unable to orient or respond to the test.

Table 5 on the following page provides examples of how the DFS is calculated for the CAA for Science.

**Table 5: Examples of Calculating the DFS for Grade 11 Student**

| **Student** | **Student’s Score on CAA or Science** | **CAA for Science Scale Score Range** | **California Science Test Scale Score Range** | **Distance from Standard** |
| --- | --- | --- | --- | --- |
| Grade 11  | Science Score: 951 | Science High School Scale Score Range for Level 2: 945-959 | Science High School Scale Score Range for Level 2: 576-614  | Because the student’s CAA Science score was within Level 2, the student receives the highest score on the Level 2 CAST range for High school Science, which is 614. This score is compared against the lowest CAST Level 3 scale score for High School Science (615).614 ***minus***615= -1pointsThe student scored 1 points **below** the lowest possible Level 3 scale score in High School Science. Therefore, the DFS is **negative** 1 points. |

#### Student Groups

To access student group definitions and the data used to determine the student groups for this indicator, please view the *California’s Accountability System and the Dashboard* mini-guide posted on the CDE [Dashboard Technical Guide](https://www.cde.ca.gov/ta/ac/cm/dashboardguide24.asp) web page.

##### Three Additional Student Groups Reported on the Science Indicator

The Science Indicator report three additional student groups that are not reported in the other state indicators and are displayed **for informational purposes only** and do not receive Performance Levels (or colors):

* ***Current English Learners (ELs):*** Students who are learning to communicate effectively in English, typically requiring instruction in both the English Language and in their academic courses, are included in the EL Student Group for the Science Indicator.
* ***Recently Reclassified English Learners*** (Reclassified Fluent-English Proficient [RFEP] Only): ELs who have sufficient English proficiency to be reclassified as a fluent English speaker and are included in the EL Student Group for the Science Indicator.
* ***English Only:*** Students for whom the only language reported on the Home Language Survey (HLS) is English or American Sign Language.

Table 8 below identifies the rules used to place students in these three student groups. Note that the data used to determine placement in a student group are extracted from CALPADS.

**Table 8: Three Additional Student Groups Defined**

| **State Indicator** | **Current English Learners** | **Recently Reclassified English Learners Only** (RFEP Only) | **English Only** |
| --- | --- | --- | --- |
| **Science**2024 CAST and CAA (Grades 5, 8, and high school) | Students who are identified as EL at any time during the school year at the school or LEA in EOY 3. | Students who are included in the EL student group for the Science Indicator and have reclassified within the past four years (i.e., reclassified after June 15, 2020) at the school or LEA in EOY 3. | Students who are identified as English Only at the school or LEA in EOY 3. |

#### School Dashboard Additional Reports

Designed for educators, the [School Dashboard Additional Reports](https://www.cde.ca.gov/ta/ac/cm/dbadditionalrpts.asp) offer information and data beyond what are reported on the Dashboard, including summarized views across all state indicators. Science includes the following report:

* **Participation Rate Report,** which displays the number of students included in the calculation of the participation rates.

### School and LEA Examples

#### Example: Toto High School

(Serves Students in Grade Nine through Grade Twelve)

##### Step 1: Calculate the Science Participation Rate

For the 2023–24 testing period, Toto High School had 321 students in grade 12 enrolled during the school’s Dashboard accountability testing window. This total excludes records for: (1) ELs who were enrolled in a U.S. school for less than one year and (2) students flagged with a medical emergency. Of these students, 290 logged on to the CAST and 9 logged on to the CAA for Science. This equals 299 tested grade 12 students. There were also 20 grade 10 students, and 21 grade 11 students that logged on to the CAST during the 2023-24 testing period.

Based on the enrolled and tested figures, the school’s Science participation rate was:

340 (tested) **divided by 362** (enrolled) = 0.9392 or 93.9 percent participation rate **for Science.**

##### Step 2: Calculate the DFS for the California Science Test and California Alternate Assessment for Science

1. First, take 331 CAST results in **Science** and remove all records for students who were not continuously enrolled. The remaining records, which were 330, reflect the total number of valid scores that are included in the denominator of the DFS.
2. Next, calculate the DFS for each valid score. Be sure to use the appropriate scale score for each grade. For example:
* **High School Scale Score Range for Level 3:** 615-635

Take each valid Science scale score results and calculate the distance from 615. Example: Jerry (a grade 12 student) scored 609. The calculated distance is:

609 ***minus*** 615 = -6 (or 6 points below Standard)

* **High School Scale Score Range for Level 3:** 615-635

Take each valid Science scale score results and calculate the distance from 615. Example: Dave (a grade 11 student) scored 580. The calculated distance is:

580 ***minus*** 615 = -35 (or 35 points below Standard)

* **High School Scale Score Range for Level 3:** 615-635

Take each valid Science scale score results and calculate the distance from 615. Example: Agatha (a grade 12 student) scored 638. The calculated distance is:

638 *minus* 615 = 23 points above Standard.

##### Step 3: Calculate the DFS for California Alternate Assessment for Science

1. First, take all 9 CAA test results in Science (from those students who tested) and remove all records for: (1) ELs who were enrolled in a U.S. school for less than one year, (2) students who were not continuously enrolled, (3) students flagged with a medical emergency, and (4) student records in the CAASPP file that reflect a LOSS. The remaining records, 8, reflect the total number of valid scores that are included in the denominator.
2. Next, calculate the DFS for each valid score. Be sure to substitute the student’s CAA score with the “Top-of-the-Range” or top score point for the same CAST achievement level. For example:
* **High School CAA Score**

Take each valid Science scale score results and substitute the score with the top score of the same CAST achievement level.

Example: Ahmed (a grade 12 student) scored 921 (Level 1) on the CAA. Substitute this score with the “top-of-the range” grade eleven Level 1 CAST score, which is 575. Compare this score against the lowest grade eleven Level 3 CAST score, which is 615. The calculated distance is:

575 ***minus*** 615 = -40 (or 40 points below Standard)

* **High School CAA Score**

Take each valid Science scale score results and substitute the score with the top score of the same CAST achievement level.

Example: Brian (a grade 11 student) scored 950 (Level 2) on the CAA. Substitute this score with the “top-of-the range” grade eleven Level 2 CAST score, which is 614. Compare this score against the lowest grade eleven Level 3 CAST score, which is 615. The calculated distance is:

614 ***minus*** 615 = -1 (or 1 point below Standard)

##### Step 4: Calculate Status for the LEA, School, or Student Group

1. First, add all of the distances calculated for each valid score in Steps 2 and 3. For instance, taking the distances calculated for Jerry, Dave, Agatha, Ahmed, and Brian above:

(-6) + (-35) + (23) + (-40) + (-1) = -59 points

1. Divide total sum of distances (Step 4a) by the total number of students. The calculated total DFS was 688.

(688 [DFS] ***divided by***338 (total number of tested students) = **2.0355** which is rounded to **2.0 points**

The LEA’s average DFS is 2.0 points above Standard.

##### Step 5: Calculate Change

In order to calculate Change, the prior year Status must be used. The prior year Status for Toto High School was 3.135 points. Because Change is calculated *prior to rounding*, the calculation is:

* Current Year Status: 2.0355 points above Standard
* Prior Year Status: 3.135 points below Standard
* Change Calculation: (Difference Between Current Year Status to Prior Year Status) 2.0355 *minus* -3.135= 5.1705 which is rounded to 5.2 points

Toto High School increased by 5.2 points on the Science Indicator.

### Frequently Asked Questions

This section covers some of the commonly asked questions by LEAs. For a more comprehensive list of questions and answers, please refer to the CDE [Science Indicator FAQs](https://www.cde.ca.gov/ta/ac/cm/dbscifaq.asp) web page.

1. **Is the participation rate calculated for student groups?**

Yes. The participation rate is calculated at the LEA, school, and student group levels. The same calculation and business rules apply to all three levels.

1. **Is the participation rate reported on the Dashboard?**

No. However, participation rates are available on the CDE [School Dashboard Additional Reports and Data](https://www6.cde.ca.gov/californiamodel/) web page – select the participation rate report.

1. **I heard that parent opt outs did not impact a school’s Science Indicator results. Is this true?**

Parent opt outs will not have an impact on the Science Indicator on the 2024 Dashboard because the indicator will not have a 95 percent minimum participation rate. However, starting with the 2025 Dashboard, LEAs, schools, and student groups will be held to a minimum participation rate of 95 percent. These students will be **included in the denominator** of the participation rate and excluded from the numerator.

1. **The CAASPP test completion rates and the Dashboard participation rates do not match. Is this an error?**

No. Under CAASPP, LEAs can access test completion rates, which are based on the *total* number of students who took the test at a given school. The participation rates for the Dashboard only includes students continuously enrolled during the “accountability testing window”. This accountability window includes the application of grace periods, which hold an LEA/school harmless when there is inadequate time to administer the assessments. More on the differences between the CASSPP and the Dashboard are detailed at the beginning of this mini-guide. They are also available in the “Crosswalk Between the Dashboard and DataQuest” document available on the CDE [Dashboard Resources](https://www.cde.ca.gov/ta/ac/cm/documents/dashboarddqcrosswalk.docx) web page.

1. **Will pair/share be applied to the Science Indicator when a school does not have a testing eligible grade level (e.g. K-4 elementary schools)?**

The 2024 Dashboard will not apply a pair/share method for schools that do not have an eligible testing grade level.

1. **I have a student who enrolled after Fall Census day and therefore is not continuously enrolled to be included in the DFS. Do I still need to test the student?**

Yes. California *Education Code*Section 60641(a)(1) requires that the tests “…are scheduled to be administered to all pupils” and Title 5 Regulations Section 851(a) requires that “…LEAs shall administer the achievement tests”. Therefore, regardless of when the students enroll at the LEA or if the final score will be included in the DFS calculation, LEAs are required to test their students.

1. **Why are my completion reports on the Test Operations Management System (TOMS) not the same as my participation rate on the Dashboard?**

The TOMS reports provide insight into the students who have taken part in the assessments in “real-time”. However, the Dashboard does not use the same inclusion and exclusion rules and does not receive any testing data until September/October. Therefore, the Dashboard participation rate and the TOMS completion reports can be the same or different depending on the student.

1. **If my school is TK-8, will high school scores be included in my school’s DFS results?**

DFS results for schools, LEAs, and Student groups will be based on grades that are tested at your school. For example, a TK-8 school with students testing in grades five and eight will only include scores from students in grades five and eight.

1. **My school did not reach 95 percent participation on the California Science Test (CAST). What will happen?**

A participation rate penalty will be implemented with the 2025 Dashboard for LEAs, schools, and student groups that do not have at least a 95 percent participation rate. The penalty was not included in the 2024 Dashboard.

1. **My school did not receive a color for the Science Indicator on the 2024 Dashboard. Is this a mistake?**

The Science Indicator on the 2024 Dashboard will be displayed for informational purposes only. The State Board of Education will determine cut scores for status, change, and performance colors at a future meeting.

### Next Steps for the Science Indicator

##### Science Assessment

The CDE presented a two-year timeline to the SBE in March 2024 for adding Science as a full Indicator to the Dashboard. The CDE and SBE have committed to heighten the visibility and awareness of the CAST and CAA-Science results onto the Dashboard this year. In 2024-25, the CDE will continue working to complete the second phase of the Science Assessment Work Timeframe which includes SBE approval of status, change, and a color scheme for the five-by-five color table. CDE will also bring items to the SBE regarding the inclusion of Science within the state accountability system through differentiated assistance criteria and the federal accountability system through ESSA eligibility identification. For the latest details presented to the SBE, please refer to the [March 2024 SBE Agenda Item 3](https://www.cde.ca.gov/be/ag/ag/yr23/documents/mar23item03.docx) and July 2024 SBE agenda Item 2.

### Local Data Sources

Another critical resource for LEAs is their own local data as it reflects an up-to-date picture of current students. Here are several local sources that can be considered for use:

* Student Score Data Files in the Test Operations Management System (TOMS).
* Any local assessment data files if local assessments were administered.
* LEA, school, and student group CAASPP results.

### Appendix A

#### Scale Score Ranges for the California Science Test

| **Grade** | **Minimum Scale Score** | **Maximum Scale Score** | **Scale Score Range for Standard Not Met (Level 1)** | **Achievement Level Scale Score Range for Standard Nearly Met (Level 2)** | **Achievement Level Scale Score Range for Standard Met (Level 3)** | **Achievement Level Scale Score Range for Standard Exceeded (Level 4)** |
| --- | --- | --- | --- | --- | --- | --- |
| 5 | 150 | 250 | 150–178 | 179–213 | 214–230 | 231–250 |
| 8 | 350 | 450 | 350–377 | 378–414 | 415–432 | 433–450 |
| High School (Grades 10–12) | 550 | 650 | 550–575 | 576–614 | 615–635 | 636–650 |

### Appendix B

#### Scale Score Ranges for California Alternate Assessments For Science

| **Grade** | **Min Scale Score** | **Max Scale Score** | **Achievement Level Scale Score Range for Level 1** | **Achievement Level Scale Score Range for Level 2** | **Achievement Level Scale Score Range for Level 3** |
| --- | --- | --- | --- | --- | --- |
| 5 | 500 | 599 | 500-544 | 545-559 | 560-599 |
| 8 | 800 | 899 | 800-844 | 845-859 | 860-899 |
| High School (Grades 10–12) | 900 | 999 | 900-944 | 945-959 | 960-999 |

### Appendix C: Descriptive Text for Images in Guide

This section contains the descriptive text to the images presented throughout this guide to ensure accessibility to individuals with disabilities as required by Section 508 of the federal Rehabilitation Act of 1973.

**[Figure 1](#Figure3): How to Determine the Accountability Testing Window when Start and End Date is 1 to 14 Calendar Days**

This image reflects how the accountability testing window is determined for the participation rate. The larger testing window is the window selected by LEAs. The testing window for the Dashboard starts when the first student at the school (or track) takes the test and is identified by a purple arrow pointing to the testing window. Once this smaller window is determined, if the start of this window to the end of the window is one to 14 calendar days, then no grace periods are applied. Rather, all of the days after the first student takes the test is the accountability testing window, which is illustrated by a blue brace.

**[Figure 2](#Figure4): How to Determine the Accountability Testing Window when Start and End Date is 15 to 30 Calendar Days**

This image reflects how the accountability testing window is determined for the participation rate. The larger testing window is the window selected by LEAs. The testing window for the Dashboard starts when the first student at the school (or track) takes the test and is identified by a purple arrow pointing to the testing window. Once this smaller window is determined, if the start of this window to the end of the window is 15 to 30 calendar days, then one ending grace period is applied at the end as identified through the orange dotted brace. The days between when the first student takes the test to the ending grace period is the accountability testing window, which is illustrated by a blue brace.

**[Figure 3](#Figure5): How to Determine the Accountability Testing Window when Start and End Date is 31 or More Calendar Days**

This image reflects how the accountability testing window is determined for the participation rate. The larger testing window is the window selected by LEAs. The testing window for the Dashboard starts when the first student at the school (or track) takes the test and is identified by a purple arrow pointing to the testing window. Once this smaller window is determined, one beginning grace period and one ending grace period are applied at the ends as identified through orange dotted braces. What is left in between the grace periods is the accountability testing window, which is illustrated by a blue brace.

**[Figure 4](#Figure6): How is the DFS Calculated for Each Student**

This image shows the CAST scale score ranges for each level ranging from: 150, 179, 214, 231, and 250. Level 3 is shaded to note that the range of this level is from 214 to 231. The student’s score is depicted with a circle at 201. This is to show that the DFS reflects “the distance” between the student’s score and the Standard Met Achievement Level threshold (i.e., the lowest threshold scale score for Level 3).

**[Figure 5](#Figure7): Calculating the Average DFS for a LEA, School, or Student Group**

This image reflects six students standing in a row. Each student’s DFS is shown below, which are (from left to right): -1, +8, +0, +1, -6, and +8. The right side of the image reflects the calculation formula which adds all the DFS and then divide by 6. This results in 1.7 points.