Verifying Proficiency
Graduation Standards

Verifying achievement of graduation standards—the learning expectations students must achieve to be eligible for grade promotion or a diploma—should be based on a student's achievement of performance indicators over time. The achievement of graduation standards requires students to develop a strong knowledge base and sophisticated conceptual understanding. Performance indicators describe, in more fine-grained detail, the specific knowledge and skills that students must acquire to demonstrate they have met a graduation standard—in effect, performance indicators break down comprehensive graduation standards into their component parts.

The following examples, taken from our exemplar graduation standards for English language arts and mathematics, will help to illustrate the relationship between graduation standards and performance indicators:

Sample Graduation Standard: English Language Arts
Conduct research projects based on focused questions, demonstrating understanding of the subject.

Performance Indicators

- Collect relevant information from multiple print and digital sources.
- Integrate accurate information into the text selectively and purposefully to maintain the flow of ideas.
- Follow a standard citation format, avoiding plagiarism and overreliance on any one source.
- Draw evidence from literary or informational texts to support analysis, reflection and research.

Sample Graduation Standard: Mathematics
Reason and model quantitatively, using units and number systems to solve problems.

Performance Indicators

- Extend the properties of exponents to rational exponents.
- Use the properties of rational and irrational numbers.
- Reason quantitatively and use units to solve problems.
- Perform arithmetic operations with complex numbers.
- Use complex numbers in polynomial identities and equations.

This document describes two primary ways that schools and educators can verify a student's achievement of graduation standards.

Verification Methods

Using aggregate scores on performance indicators, districts and schools can verify the achievement of graduation standards in two primary ways: *Body-of-Evidence Verification* or *Mathematical Verification*.

1. Body-of-Evidence Verification: Determining proficiency using a body of evidence requires a review and evaluation of student work and assessment scores. The review and evaluation process may vary in both format and intensity, but verifying proficiency requires that educators use common criteria to evaluate student performance consistently from work sample to work sample or assessment to assessment. For example, teachers working independently may use agreed-upon criteria to evaluate student work, a team of educators may review a student portfolio using a common rubric, or a student may demonstrate proficiency through an exhibition of learning that is evaluated by a review committee using the same consistently applied criteria.
2. Mathematical Verification: Determining proficiency using mathematical verification requires teachers to use a common formula that aggregates assessment results on performance indicators over time to determine the achievement of a graduation standard.

Approach	Pros	Cons
Body-of-Evidence Verification	• Encourages students and educators to reflect on and assess learning progress and work quality. • Emphasizes the evaluation of a body of work that has been collected over time. • Encourages students to take greater ownership over the learning process. • Allows for evidence from outside-of-school learning pathways, such as internships or dual-enrollment courses. • Can be used to involve parents and community members in the learning process, such as through a public exhibition of learning.	• Can be a time-consuming process for both students and teachers. • May be perceived as a disconnected, after-the-fact event rather than an integral part of the learning and assessment process. • May require schools to communicate student achievement differently than they have in the past, which may be unfamiliar or confusing to some parents and families. • Requires teachers, reviewers, and scorers to use common evaluation criteria and processes, which can require training and practice to calibrate.
Mathematical Verification	• Results are relatively straightforward and easy to calculate. • Utilizes scores on student work that has already been assessed. • Communication and understanding of student progress can be done in more traditional and familiar ways. • Existing student-information systems often use mathematical calculations to report student learning.	• Learning progress can be obscured when calculating a series of scores rather than evaluating learning growth over time. • May allow for less student voice and choice than a body-of-evidence approach. • May inadvertently limit flexibility and creativity when it comes to instruction and assessment. • May encourage students to narrowly focus on grades and numerical indicators of success, rather on their learning progress and skill development.

Body-of-Evidence Verification

Determining proficiency using a body-of-evidence process requires students to gather work samples and other evidence of academic accomplishment, present the evidence to educators, and have it scored against a set of common criteria defined in a rubric or scoring guide.

There are two primary approaches to body-of-evidence verification that schools typically use:

Approach	Process
Portfolios	Students collect work samples and other evidence of learning from courses and academic experiences that teachers or review committees assess using common criteria at the end of a defined instructional period, such as a term or school year.
Exhibitions	Students work toward a culminating demonstration of learning that teachers or review committees assess using common criteria at the end of a defined instructional period, such as a term or school year.

Portfolios and exhibitions typically address a wide range of content-area and cross-curricular standards, including critical thinking and problem solving, reading and writing proficiency, or habits of work and character traits (e.g., teamwork, preparedness, responsibility, or persistence). In course-based portfolio and exhibition assessments, individual teachers use common, agreed-upon criteria to evaluate a body of work that students have completed over the course of an instructional period. For cross-curricular portfolios and exhibitions, groups of content-area teachers or review committees evaluate the work. It should be noted that portfolios do not require students to create new work, but to collect and present past work, evidence, and accomplishments—although exhibitions can incorporate examples of past work as well.

In many schools, end-of-term portfolios and exhibitions are also used as a way to introduce greater creativity and flexibility into the assessment process. For example, students may incorporate work samples and evidence from outside-of-school learning experiences, such as internships, dual-enrollment courses, vacation-break programs, or self-directed projects. The approach may also allow for greater instructional flexibility because teachers will be less focused on generating a certain number of scores, using certain types of assessments, over the course of an instructional period.

To use these methods effectively, schools need to invest time and resources in their body-of-evidence assessment system. For example, teachers are often trained in portfolio evaluation and consistent scoring; students are given time and support to create their portfolios; students and their parents are informed about the criteria and how the evidence will be evaluated; and the schools give teachers and review committees time during the regular school day to evaluate the portfolios.

Mathematical Verification

Mathematical verification can be computed in three primary ways:

Approach	Process
Formula	Performance-indicator scores are calculated using a common mathematical formula, such as an average, to determine a student's proficiency level on each graduation standard.
Majority	Students are required to demonstrate achievement of a majority of performance indicators to meet a graduation standard.
Totality	Students are required to demonstrate achievement of all performance indicators to meet a graduation standard.

The following table illustrates how the three mathematical approaches may be used to determine whether a student has met a graduation standard. In this example, we use a 4.0 scale in which a score of 3.0 meets the standard:

Mathematics Graduation Standard: Number and Quantity

Reason and model quantitatively, using units and number systems to solve problems

Performance Indicator	Average	Majority	Totality
Extend the properties of exponents to rational exponents	3.5	3.5	3.5
Use the properties of rational and irrational numbers	3.0	3.0	3.0
Reason quantitatively and use units to solve problems	3.5	3.5	3.5
Perform arithmetic operations with complex numbers	3.0	3.0	3.0
Use complex numbers in polynomial identities and equations	2.0	2.0	2.0
Meets Graduation Standard	**YES** The average (3.0) meets the proficiency benchmark	**YES** Four of five performance indicators were achieved	**NO** Not all performance indicators were achieved