

Culture Matters

Teachers must be able to *CONNECT* with their learners before they can share core content. Teachers teach learners, not subjects. To truly engage learners, we must reach out to them in ways that are culturally & linguistically responsive and appropriate, and we must examine the cultural assumptions and stereotypes we bring into the classroom that may hinder interconnectedness.



Parents' Guide to Support Learner Success

EMPOWERING PARENTS TO SUPPORT THE COMMON CORE CHALLENGE AT HOME

HIGH SCHOOL

As practitioners in education and facilitators of cultural competency training, we know that in order for learners to be successful in today's schools, parents need to be knowledgeable of the most effective ways to support learning at home. Educators can work collaboratively to assist their learners to be more successful, by tapping into support from home. This guide, which provides an overview of what your child will learn by the end of high school in English language arts/literacy and mathematics, prepares your child to be ready to succeed after graduation at the college level and/or in the workforce with his or her chosen career. This guide is based on the new Common Core State Standards, which have been adopted by 44 states (*at time of publication*). The Common Core State Standards are much more rigorous than the previously held standards amongst the states. In order to compete globally, our nation needs to increase critical thinking skills in our children.

This guide is designed to offer parents with creative ways to become involved in supporting their child's education as well as ways to communicate the expectations of the Common Core State Standards. If your child is meeting the expectations outlined in these standards, he or she will be prepared for success after graduation.

WHY ARE ACADEMIC STANDARDS IMPORTANT?

The academic standards are important because they help ensure that all learners, no matter where they live, are prepared for success in college and in their chosen careers. Rigorous standards provide an important first step – a clear roadmap and process for learning – to be utilized by a collaborative team of facilitators of learning, parents, and learners. Having clearly defined goals helps families and facilitators of learning work together to ensure that learners succeed. They also will help your child develop critical thinking skills that will prepare him or her for college and career.

To become ready for college and career, learners at the high school level learn to evaluate complicated arguments and confidently prevail the challenges posed by the compound written materials in independent situations. Engaging in a wide and deep manner of reading non-fiction and informational texts of steadily increasing sophistication, learners expand their literacy and cultural knowledge and better understand references and images. They also increase the 21st century of flexibility, along with concentration and fluency, to produce high-quality, first drafts of writing under tight deadlines. With these skills, they are able to revisit and make improvements to a piece of writing over multiple drafts, if needed. By the end of the 12th grade they master the essential “rules” of standard written and spoken English and resolve usage issues by consulting style and usage guides. By engaging in writing and participating in a variety of diverse conversations, they assert and defend claims and produce evidence; showing what they know about a subject using appropriate examples.



A Snapshot of What Your Child Will Be Concentrating on in High School

English Language Arts & Literacy

In high school, learners, through a critical lens, will meticulously read multi-faceted works of literature and informational texts. Throughout the writing process and during class discussions, learners will interpret what they read and present analysis based on appropriate examples and evidence from the text. They will evaluate the strength of the author’s or speaker’s points and assumptions based on evidence from the text. To expand their literary and cultural knowledge, learners will read great classic and contemporary works representative of various time periods, cultures, and worldviews. High school learners will develop the skill, fluency, and concentration to produce high-quality writing, as well as the capacity to edit and improve their writing over numerous drafts. A glimpse of some of the work learners will be involved in include:

- Reading and analyzing substantive works of American **and** world literature and examining how two or more texts from the same period treat similar themes or topics (*exploring multiple perspectives*); using a wider range of evidence to support an analysis
- Citing intense evidence from a text to analyze what it says plainly, as well as what it infers, including when a text leaves a point unclear or unproven
- Identifying and evaluating the rational used in foundational U.S. historical documents (the Declaration of Independence, the Preamble to the Constitution, the Bill of Rights), including the application of constitutional or legal principles (*consider multiple perspectives in evaluating rational [reasoning] of those involved*)
- Supporting arguments in an analysis of challenging topics or texts using valid reasoning and relevant and sufficient evidence, and as appropriate, detecting inconsistencies and ambiguities
- Conducting short- and long-term research projects to answer a question or solve a problem

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- Participating effectively in group discussions, expressing ideas clearly and persuasively and building on the ideas of others
- Demonstrating understanding of complex or figurative language (example being hyperbole – *an obvious exaggeration, such as “You could have knocked me over with a feather”*), and distinguishing what is directly stated in a text from what is actually meant, understanding that authors often use figurative language to enhance their writing
- Understanding the role that figurative language plays in a text
- Strategically presenting information using a range (i.e., animations, video, websites, podcasts) of digital media to enhance understanding of findings, reasoning, evidence and to add interest
- Responding thoughtfully to multiple perspectives; synthesizing comments, claims, and evidence made on all sides of an issue; and resolving contradictions when possible
- Determining or clarifying the meaning of words and phrases, choosing flexibly from multiple strategies, such as using context, Greek and Latin roots (i.e., [Latin] *ambul* as in *amble* or *ambulance*, [Greek] *acro* as in *acrobat*, *acronym*, or *acrophobia*), patterns of word changes (analyze, analysis, analytical), and consulting specialized reference materials
- Interpreting figures of speech (i.e., hyperbole, paradox) in context and analyzing their role/purpose in written materials
- In writing, making an argument that is logical, well-reasoned, and supported by evidence
- Writing a literary analysis, report, or summary that develops a central idea and a coherent focus and is well supported with relevant examples, facts, and details
- Managing several research projects that address different aspects of the same topic, using more complex books, articles, and other sources
- Sharing research, findings, and evidence clearly and succinctly



Partner with your child’s teacher to have a focused conversation about learning

When you talk with your child’s teacher keep in mind that you and your child’s teacher are partners; a part of a team which includes your child. You are an important part of your child’s education. Time may be limited and you can’t cover everything. Therefore, keep the conversation focused on the most important topics. In high school for literacy, these include:

- Becoming skilled at gathering information, evaluating sources, and citing material accurately
- Asserting and defending claims, conveying what he or she understands about what he or she has read and researched

- Speaking clearly and appropriately, listening attentively when discussing findings and evidence, and building on others' good ideas while expressing his or her own ideas persuasively
- Be prepared to ask the teacher questions like:
 - Is my child at the level where he/she should be at this point of the school year?
 - Is my child becoming an effective writer?
 - Is my child demonstrating being more skilled at reading and understanding challenging material?
 - What extra support can I provide at home to reinforce what you are teaching in class?
 - How can I safeguard that my child is emerging good study habits for high school and beyond?



In high school, learners will develop a deep understanding of mathematical concepts and use mathematical ways of thinking to solve real-world problems. Unlike previous grades where learning objectives are organized by concepts – such as algebra, functions, or geometry – which learners will learn and master in various mathematical courses; these concepts build on what learners learned in the eighth grade and move toward greater depth of knowledge and skills throughout high school. These skills include:

1. Making sense of problems and persevere in solving them. – *Mathematically proficient learners start by explaining to themselves the meaning of a problem and looking for entry points to its solution. Mathematically proficient learners check their answers to problems using a different method, and they continually ask themselves, “Does this make sense?”*

2. Reasoning abstractly and quantitatively. – *Mathematically proficient learners make sense of quantities and their relationships in problem situations. Quantitative reasoning entails habits of creating a coherent representation of the problem at hand; considering the units involved; attending to the meaning of quantities, not just how to compute them; and knowing and flexibly using different properties of operations and objects.*

3. Constructing viable arguments and critique the reasoning of others. – *Mathematically proficient learners understand and use stated assumptions, definitions, and previously established results in constructing arguments. They make conjectures and build a logical progression of statements to explore the truth of their conjectures. They are able to analyze situations by breaking them into cases, and can recognize and use counterexamples. While elementary learners can construct arguments using concrete referents such as objects, drawings, diagrams, and actions, older learners learn to determine domains to which an argument applies. Learners at all grades can listen or read arguments of others, decide whether they make sense and ask useful questions to clarify or improve the arguments.*

4. Modelling with mathematics. – *Mathematically proficient learners can apply the mathematics they know to solve problems arising in everyday life, society, and the workplace. They are able to use tools as diagrams, two-way tables, graphs, flowcharts and formulas.*

5. Using appropriate tools strategically. – *Mathematically proficient learners consider the available tools when solving a mathematical problem. These tools might include pencil and paper, concrete models, a ruler, a protractor, a calculator, a spreadsheet, a computer algebra system, a statistical package, or dynamic geometry software. Proficient learners are sufficiently familiar with tools appropriate for their grade or course to make sound decisions about when each of these tools might be helpful, recognizing both the insight to be gained and their limitations. They are able to use technological tools to explore and deepen their understanding of concepts.*

6. Attending to precision. – *Mathematically proficient learners try to communicate precisely to others. They try to use clear definitions in discussion with others and in their own reasoning. They state the meaning of the symbols they choose, including using the equal sign consistently and appropriately. They are careful*

about specifying units of measure, and labeling axes to clarify the correspondence with quantities in a problem. They calculate accurately and efficiently, express numerical answers with a degree of precision appropriate for the problem context. **7.**

Looking for and making use of structure. – Mathematically proficient learners look closely to discern a pattern or structure. For example, high school learners will see 7×8 equals the well-remembered $7 \times 5 + 7 \times 3$, in preparation for learning about the distributive property. They recognize the significance of an existing line in a geometric figure and can use the strategy of drawing an auxiliary line for solving problems. They can step back for an overview and shift perspective. They see complicated things, such as some algebraic expressions, as single objects or as being composed of several objects. For example, they can see $5-3(x-y)^2$ as 5 minus a positive number times a square and use that to realize that its value cannot be more than 5 for any real numbers x and y . **8. Look for and express regularity in repeated reasoning.** Mathematically proficient learners notice if calculations are repeated and look both for general methods and for shortcuts. As they work to solve a problem, mathematically proficient learners maintain oversight of the process while attending to the details. They continually evaluate the reasonableness of their immediate results. Activities in these areas will embrace:

- Creating and solving *equations* (mathematical statements that use letters to represent unknown numbers, such as $2x-6y+z=14$) with two or more variables to describe numbers or relationships
- Building an understanding of *rational numbers* (such as $\frac{2}{3}$) to include *rational expressions* (such as $\frac{2}{x-3}$)
- Using structure of an *expression* to identify ways to rewrite it. For example, recognizing that x^6-y^6 is the difference between two squares and can also be written $(x^3)^2-(y^3)^2$
- Adding, subtracting, and multiplying *polynomials* (an expression with multiple terms such as $5xy^2=2xy-7$)
- Interpreting the *slope* of a line as the rate of change in two variables and the *intercept* as the constant term in a *linear model*
- Building and analyzing *functions* that describe relationships between quantities and using *function notation* (for example, $f(x)$ denotes the output of f corresponding to the input of x)
- Representing and performing operations with *complex numbers* (numbers such as $3+5i$, where i is an imaginary number and $i=\sqrt{-1}$)
- Understanding the rules of *probability* and using them to interpret data and evaluate the outcomes of decisions
- Distinguishing between correlation and causation
- Interpreting quantitative and categorical data
- Understanding and proving geometric *theorems* (mathematical statements whose truth can be proven on the basis of previously proven or accepted statements)
- Using algebraic reasoning to prove geometric theorems
- Applying geometric concepts to model real-life situations

The high school standards are organized into six major content areas: **Number and Quantity; Algebra; Functions; Modeling; Geometry; and Statistics and Probability.**

The Standards for Mathematical Content are a balanced combination of procedure and understanding. Expectations that begin with the word “understand” are often especially good opportunities to connect the practices to the content. Learners who lack understanding of a topic may rely on procedures too heavily. Without a flexible base from which to work, they may be less likely to consider analogous problems, represent problems coherently, justify conclusions, apply the mathematics to practical situations, use technology mindfully to work with the mathematics, explain the mathematics accurately to other learners, step back for an overview, or deviate from a known procedure to find a shortcut. In short, a lack of understanding effectively prevents a learner from engaging in the mathematical practices.

Number Quantity

- Extending the properties of whole-number exponents leads to new and productive notation. For example, properties of whole-number exponents suggest that: $(5^{1/3})^3 = 5^1 = 5$ and that $5^{1/3}$ should be the cube root of 5.
- Solving problems with a wide range of units and solving problems by thinking about units: (For example: *India has about 16% of the world population, and about 2% of the land area. What is the ratio of average population density in India to average population density in the rest of the world?*) or (*The Keystone Pipeline is 2,151 miles long [3,462 km] and cost the US \$5.2 billion to build. Divide one of these numbers by the other. What is the meaning of the answer?*)

Algebra

- Solving real-world and mathematical problems by writing and solving nonlinear equations, such as quadratic equations $((3x - 2)^2 = 6x - 4)$
- Interpreting algebraic expressions and transforming them purposefully to solve problems (i.e., in solving a problem about a loan with interest rate r and principal P , seeing the expression $P(1+r)^n$ as a product of P with a factor not depending on P)

Functions

- *Analyzing functions* – Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions). For example, given a graph of one quadratic function and an algebraic expression for another, say which has the larger maximum. (Computing this answer relies on knowledge that the learner understands the concept of a function and use function notation)

Modeling

- Analyzing real-world situations using mathematics to understand the situation better and optimize, troubleshoot, or make an informed decision: Such as, *A local mini-golf course charges \$5 per person to play a round of golf, and the course sells 120 rounds of golf per week. The manager of the course studied the effect of raising the price to increase revenue and found the following data.*

The table shows the price $p(n)$, number of rounds of golf sold, $s(n)$, and weekly revenue $r(n)$ for different numbers of 0.25 increases in price (n)

Based on the data, write a linear function to model the price of one round of golf, $p(n)$, in terms of n , the number of 0.25 increases

The maximum possible weekly revenue is what percent greater than the weekly revenue with not price increases? Justify your answer graphically or algebraically.

Geometry

- Providing theorems about triangles and other figures (i.e. that the angles in a triangle add to 180°)
- Using coordinates and equations to describe geometric properties algebraically (i.e., writing the equation for a circle in the plane with specified center and radius)

Statistics and Probability

The Common Core State Standards for high school statistics and probability reflect the greater role for collecting and interpreting data:

A. Interpreting Categorical and Quantitative Data

- Summarize, represent, and interpret data on a single count or measurement variable
- Summarize, represent, and interpret data on two categorical and quantitative variables
- Interpret linear models

B. Making Inferences and Justifying Conclusions

- Understand and evaluate random processes underlying statistical experiments
- Make inferences, justify conclusions in sample surveys, experiments and observational studies

C. Conditional Probability and the Rules of Probability

- Understand independence and conditional probability and use them to interpret data
- Compute probabilities of compound events in a uniform probability model

D. Using Probability to Make Decisions

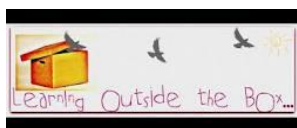
- Calculate expected values and use them to solve problems
- Use probability to evaluate outcomes of decisions



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When you talk with your child's teacher keep in mind that you and your child's teacher are partners; a part of a team which includes your child. You are an important part of your child's education. Time may be limited and you can't cover everything. Therefore, keep the conversation focused on the most important topics: the six major content areas: **Number and Quantity; Algebra; Functions; Modeling; Geometry; and Statistics and Probability.**

- Be prepared to ask the teacher questions like:
 - In what areas is my child excelling? How can I support this success?
 - Ask to see samples of your teen's work. Ask the teacher questions such as: Is this piece of work satisfactory? How could it be better? How can I help my child improve or excel in this area?
 - Is my child comfortable using coordinates in algebra and geometry?
 - Can my teen break a complex problem down into parts and apply the math he or she knows to problems outside of mathematics?
 - What do you suppose is giving my child the most trouble? How can I help my child improve in this area?
 - Does my child have the knowledge to learn advanced mathematics after high school if he/she so chooses?
 - Are there options provided by the school for enrichment experiences in mathematics, science, technology, or engineering (STEM areas) or for learners having difficulty in mathematics?



All learning does not take place in the classroom, nor should it. Learning must continue at home, encouraging learners to “think outside the box.” Try to create a quiet place for your child to study, and set aside time *every day* when your child can concentrate. You should also set aside 15 to 30 minutes each week to sit down with your child, while he or she completes homework. This will help you to stay in tuned with what your child is working on, and it will help you to be the first to know if your child needs assistance with specific topics. Furthermore, here are some activities you can do with your child to support successful learning at home:

English Language Arts & Literacy

- Increase time for conversation at home. Discuss classroom assignment, projects, activities, and homework. Ask your teen how he or she is doing in class and how you can help.
- Ask your teen about his or her academic goals and career interests. Assist in gathering various sources of information on college and career opportunities.
- Begin to explore colleges and other postsecondary options that are of interest to your teen.

Mathematics

- Model for your teen an enthusiasm for the study of mathematics.
- Encourage your teen to be persistent; make sure that he or she knows that mathematics requires patience, practice, and time to think and reflect.
- Encourage your teen to ask his or her teachers questions either during or after class.
- Urge your teen to review class notes every night. If there is something he or she does not understand, tell your child to look at the answers and work “backwards”



Planning for College and Career

- At the beginning of high school, sit down with your teen's teachers, counselor or other advisor to discuss what it will take for your child to graduate, your teen's goals and his/her plans after high school. Create a plan together to help your teen reach these goals. This plan should include:
 - An **appropriate course sequence** to meet your teen's goals.
 - The most **appropriate extracurricular activities** for your teen.
 - Your **plan to assist your teen prepare for college or career**. (For example, are there certain internships which might aid in building his/her work experiences in that subject area?)



For more information go to www.corestandards.org
the official online home of the Common Core State Standards