PSAT/NMSQT Skill Category and Description of Skills	Wyoming Math: Content and Performance Standards 2008		
	Course/ Level	Standard	Standard ID
Algebra and Functions Solve problems using algebraic expressions and symbols to represent relationships, patterns and functions of different types.	Grades: 9-11	MA11.4.1 Students use algebraic concepts, symbols, and skills to represent and solve real-world problems.	MA11.4.1
	Grades: 9-11	MA11.4.2 Students write, model, and evaluate expressions, functions, equations, and inequalities.	MA11.4.2
	Grades: 9-11	MA11.4.3 Students graph linear equations and interpret the results in solving algebraic problems.	MA11.4.3
	Grades: 9-11	MA11.4.4 Students solve, graph, or interpret systems of linear equations.	MA11.4.4
	Grades: 9-11	MA11.4.5 Students connect algebra with other mathematical topics.	MA11.4.5
Communication Express mathematical ideas precisely and communicate them coherently and clearly in the language and notation of mathematics.	Grades: 9-11	MA11.2.3 Students communicate the reasoning used in identifying geometric relationships in problem-solving situations.	MA11.2.3
	Grades: 9-11	MA11.5.3 Students communicate about the likelihood of events using concepts from probability. sample space	MA11.5.3.a
Connections Connect ideas from different areas of mathematics (particularly geometry and algebra) to state or solve abstract or applied problems.	Grades: 9-11	MA11.2.5 Students connect geometry with other mathematical topics.	MA11.2.5
	Grades: 9-11	MA11.4.5 Students connect algebra with other mathematical topics.	MA11.4.5
Data, Statistics, and Probability Analyze data, understand descriptive statistics, make inferences and determine the likelihood that certain events will occur.	Grades: 9-11	MA11.5.1 Students apply knowledge of mean, median, mode, and range to interpret and evaluate information and data.	MA11.5.1
	Grades: 9-11	MA11.5.2 Students draw reasonable inferences from statistical data and/or correlation/best fit line to predict outcomes.	MA11.5.2
	Grades: 9-11	MA11.5.3 Students communicate about the likelihood of events using concepts from probability. sample space	MA11.5.3.a

PSAT/NMSQT Skill Category and Description of Skills	Wyoming Math: Content and Performance Standards 2008 Course/ Level	Standard	Standard ID
Data, Statistics, and Probability Analyze data, understand descriptive statistics, make inferences and determine the likelihood that certain events will occur.	Grades: 9-11	MA11.5.3 Students communicate about the likelihood of events using concepts from probability. evaluate simple probabilities	MA11.5.3.b
	Grades: 9-11	MA11.5.3 Students communicate about the likelihood of events using concepts from probability. evaluate experimental vs. theoretical	MA11.5.3.c
	Grades: 9-11	MA11.5.4 Students determine, collect, organize, and analyze relevant data needed to make conclusions.	MA11.5.4
Geometry and Measurement Solve problems based on understanding the properties of shapes, such as triangles and circles, and the spatial relationships between angles and lines.	Grades: 9-11	MA11.2.1 Students use transformations, congruency, symmetry, similarity, perpendicularity, parallelism, and the Pythagorean Theorem to solve problems.	MA11.2.1
	Grades: 9-11	MA11.2.2 Students communicate, using mathematical language, to: Interpret, represent, or create geometric figures;	MA11.2.2.a
	Grades: 9-11	MA11.2.2 Students communicate, using mathematical language, to: Draw or build figures from a mathematical description;	MA11.2.2.b
	Grades: 9-11	MA11.2.2 Students communicate, using mathematical language, to: Analyze properties and determine attributes of 2- and 3- dimensional objects.	MA11.2.2.c
	Grades: 9-11	MA11.2.3 Students communicate the reasoning used in identifying geometric relationships in problem-solving situations.	MA11.2.3
	Grades: 9-11	MA11.2.4 Students solve problems involving the coordinate plane such as the distance between two points, the midpoint, and slope.	MA11.2.4
	Grades: 9-11	MA11.2.5 Students connect geometry with other mathematical topics.	MA11.2.5
.	Grades: 9-11	MA11.3.1 Students apply estimation and measurement using the appropriate methods and units to solve problems involving length, weight/mass, area, surface area, volume, and angle measure.	MA11.3.1
	Grades: 9-11	MA11.3.2 Students demonstrate an understanding of both metric and U. S. customary systems. Students are able to convert within each system.	MA11.3.2

PSAT/NMSQT Skill Category and Description of Skills	Wyoming Math: Content and Performance Standards 2008 Course/ Level	Standard	Standard ID
Geometry and Measurement Solve problems based on understanding the properties of shapes, such as triangles and circles, and the spatial relationships between angles and lines	Grades: 9-11	MA11.3.3 Students identify and apply scale, ratios, and proportions in solving measurement problems.	MA11.3.3
	Grades: 9-11	MA11.3.4 Students solve problems of angle measure including those involving polygons or parallel lines cut by a transversal.	MA11.3.4
	Grades: 9-11	MA11.3.5 Students solve indirect measurement problems.	MA11.3.5
Number and Operations Understand types of numbers (integers, fractions, decimals), their properties and the correct order of operations. Perform computations correctly.	Grades: 9-11	MA11.1.1 Students represent and apply real numbers in a variety of forms.	MA11.1.1
	Grades: 9-11	MA11.1.2 Students apply the structure and properties of the real number system.	MA11.1.2
	Grades: 9-11	MA11.1.3 Students explain their choice of estimation and problem solving strategies and justify results of solutions in problem-solving situations involving real numbers.	MA11.1.3
	Grades: 9-11	MA11.1.4 Students use proportional reasoning to solve problems.	MA11.1.4
Problem Solving Solve abstract and practical problems, applying and adapting a variety of strategies. Monitor progress and evaluate answers in terms of questions asked.	Grades: 9-11	MA11.1.2 Students apply the structure and properties of the real number system.	MA11.1.2
	Grades: 9-11	MA11.1.4 Students use proportional reasoning to solve problems.	MA11.1.4
	Grades: 9-11	MA11.2.1 Students use transformations, congruency, symmetry, similarity, perpendicularity, parallelism, and the Pythagorean Theorem to solve problems.	MA11.2.1
	Grades: 9-11	MA11.2.4 Students solve problems involving the coordinate plane such as the distance between two points, the midpoint, and slope.	MA11.2.4
	Grades: 9-11	MA11.3.1 Students apply estimation and measurement using the appropriate methods and units to solve problems involving length, weight/mass, area, surface area, volume, and angle measure.	MA11.3.1
	Grades: 9-11	MA11.3.3 Students identify and apply scale, ratios, and proportions in solving measurement problems.	MA11.3.3
	Grades: 9-11	MA11.3.4 Students solve problems of angle measure including those involving polygons or parallel lines cut by a transversal.	MA11.3.4

PSAT/NMSQT Skill Category and Description of Skills	Wyoming Math: Content and Performance Standards 2008 Course/ Level	Standard	Standard ID
Problem Solving Solve abstract and practical problems, applying and adapting a variety of strategies. Monitor progress and evaluate answers in terms of questions asked.	Grades: 9-11	MA11.3.5 Students solve indirect measurement problems.	MA11.3.5
	Grades: 9-11	MA11.4.3 Students graph linear equations and interpret the results in solving algebraic problems.	MA11.4.3
	Grades: 9-11	MA11.4.4 Students solve, graph, or interpret systems of linear equations.	MA11.4.4
	Grades: 9-11	MA11.5.3 Students communicate about the likelihood of events using concepts from probability. evaluate simple probabilities	MA11.5.3.b
	Grades: 9-11	MA11.5.3 Students communicate about the likelihood of events using concepts from probability. evaluate experimental vs. theoretical	MA11.5.3.c
Reasoning Develop and use mathematical arguments and proofs to explore the truth of conjectures and justify conclusions.	Grades: 9-11	MA11.1.3 Students explain their choice of estimation and problem solving strategies and justify results of solutions in problem-solving situations involving real numbers.	MA11.1.3
	Grades: 9-11	MA11.2.2 Students communicate, using mathematical language, to: Analyze properties and determine attributes of 2- and 3- dimensional objects.	MA11.2.2.c
	Grades: 9-11	MA11.5.1 Students apply knowledge of mean, median, mode, and range to interpret and evaluate information and data.	MA11.5.1
	Grades: 9-11	MA11.5.2 Students draw reasonable inferences from statistical data and/or correlation/best fit line to predict outcomes.	MA11.5.2
Representation Use and translate among representations including verbal, numerical, symbolic, and graphical to communicate mathematical ideas and solve problems.	Grades: 9-11	MA11.1.1 Students represent and apply real numbers in a variety of forms.	MA11.1.1
	Grades: 9-11	MA11.2.2 Students communicate, using mathematical language, to: Interpret, represent, or create geometric figures;	MA11.2.2.a
	Grades: 9-11	MA11.2.2 Students communicate, using mathematical language, to: Draw or build figures from a mathematical description;	MA11.2.2.b

PSAT/NMSQT Skill Category and Description of Skills	Wyoming Math: Content and Performance Standards 2008		
	Course/ Level	Standard	Standard ID
Representation Use and translate among representations including verbal, numerical, symbolic, and graphical to communicate mathematical ideas and solve problems.	Grades: 9-11	MA11.3.2 Students demonstrate an understanding of both metric and U. S. customary systems. Students are able to convert within each system.	MA11.3.2
	Grades: 9-11	MA11.4.1 Students use algebraic concepts, symbols, and skills to represent and solve real-world problems.	MA11.4.1
	Grades: 9-11	MA11.4.2 Students write, model, and evaluate expressions, functions, equations, and inequalities.	MA11.4.2
	Grades: 9-11	MA11.5.4 Students determine, collect, organize, and analyze relevant data needed to make conclusions.	MA11.5.4

PSAT/NMSQT Skills Insight™ Alignment to State Standards
Executive Summary, July 2010

Purpose
PSAT/NMSQT *Skills Insight*™ is a free online tool designed to help students and educators gain a better understanding of how PSAT/NMSQT® scores relate to specific academic skills. It provides a description of the academic skills that are typical of students scoring at each score band, suggestions for improvement, and practice test questions. Learn more by visiting www.collegeboard.com/psatskills.

The information provided by PSAT/NMSQT *Skills Insight* is organized by skill category. There are five skill categories for the critical reading section, nine for the mathematics section (4 content skill categories; 5 process skill categories), and 5 for the writing skills section. This report shows the alignment between state standards in English Language Arts and Mathematics and the content and skills measured by the PSAT/NMSQT.

Using Alignment Results with PSAT/NMSQT Reports
Schools and districts that administer the PSAT/NMSQT have access to the *Summary of Answers and Skills* (SOAS) report[1]. SOAS reports summarize performance on test sections, skill categories, and individual test questions, and compare local results to the state or nation. Using SOAS and the alignment information provided in this report, schools and districts can develop remediation strategies to help students improve their college readiness skills, future SAT scores, and performance on state assessments.

Mathematics: Alignment Approach and Findings
- There are nine Skills Categories in Mathematics, representing both content and process skills: *Number and Operations*; *Algebra and Functions*; *Geometry and Measurement*; *Data, Statistics and Probability; Problem Solving*; *Representation*; *Reasoning*; *Connections* and *Communication.*
- Only standards for grades 9-12 were considered for these alignments. Within grades 9-12, the areas with the greatest concentration of alignments are the Number and Operations, Algebra and Geometry strands of the state standards. In most cases, Precalculus and Trigonometry were excluded from the alignment study.
- The organization and hierarchy of standards varies on a state-by-state basis. During the alignment process, the College Board aligned the PSAT/NMSQT skills to the most specific level of the state's standards.
- States often integrate process and content standards. In such cases, the state standard received an alignment to both a process skill category and a content skill category.
- Generally, there is strong correspondence between the PSAT/NMSQT Skills Categories in Mathematics and state standards. Coverage of the Skills Categories across a state standards document is dependent upon the specific state standards and on the degree of specificity of language employed within the standards.
- The PSAT/NMSQT is administered to students in grades 10 and 11; consequently, the strongest areas of alignment are in the content categories of *Number and Operations*, *Algebra and Functions* and *Geometry and Measurement* and in the process categories of *Problem Solving*, *Reasoning* and *Representations*. Considering the design and purpose of the PSAT/NMSQT, extensive alignments in upper levels of high school mathematics standards, including Trigonometry, are not intended or expected.

[1] Using the access code printed on the PSAT/NMSQT *Roster of Student Scores and Plans*, SOAS reports can be downloaded from www.collegeboard.com/reports beginning in the first week of January.

- The College Board content specialists who conducted the alignments have a deep understanding of the PSAT/NMSQT test specifications. Therefore, although multiple Skills Categories might link to a particular standard, these alignments display only the strongest and most appropriate matches.

English Language Arts: Alignment Approach and Findings

- Reading and Writing each have five PSAT/NMSQT Skills Categories. In Reading, the categories are *Determining the Meaning of Words*, *Author's Craft*, *Reasoning and Inferencing*, *Organization and Ideas* and *Understanding Literary Elements*. In Writing, the categories are *Manage Word Choice and Grammatical Relationships Between Words*, *Manage Grammatical Structures Used to Modify or Compare*, *Manage Phrases and Clauses in a Sentence*; *Recognize Correctly Formed Sentences* and *Manage Order and Relationships of Sentences and Paragraphs*.
- The PSAT/NMSQT is administered to students in grades 10 and 11, and the College Board targeted the English Language Arts alignments at these specific grade levels. In states where the standards are organized by grade band (grades 9-10, 11-12) or by one high school band (grades 9-12), the College Board aligned to all high school grade levels.
- Given the purpose and design of the PSAT/NMSQT, the English Language Arts alignment is focused on the areas of reading and writing and does not include state standards in speaking, listening, or media literacy. Additionally, these alignments excluded genre-specific state standards (such as those related to American, British, or World literature), although the essential PSAT/NMSQT skills in Reading can be used to support instruction in literature.
- The organization and hierarchy of standards varies on a state-by-state basis. During the alignment process, the College Board aligned the PSAT/NMSQT skills to the most specific level of the state's standards. Coverage of the Skills Categories across a state standards document is dependent upon the specific state standards and on the degree of specificity of language employed within the standards.
- In Writing, generally there is strong correspondence between the PSAT/NMSQT Skills Categories and state standards that focus on grammar, usage, language conventions, and the role of editing and revising in writing.
- In Reading, there is strong correspondence between the PSAT/NMSQT Skills Categories and state standards in the essential areas of vocabulary development (determine the meaning of unfamiliar words or of words with multiple meanings by understanding context and by analyzing roots, prefixes, and suffixes) and reading comprehension (determine the main idea and supporting details; understand the organization of passages; analyze the various elements of an author's craft, including purpose, perspective, word choice, and use of rhetorical and literary devices and understand literary elements such as plot, characterization, and setting).

Summary

In summary, the PSAT/NMSQT Skills Categories correspond well to state standards. Educators can use these alignments to connect the PSAT/NMSQT to their local curricula and state standards to monitor student learning and to build a coherent instructional plan for their students.