Nevada Mathematics Assessment Matrix
HSPE

	C1 – Number and Operations	C2 - Algebra	C3 - Measurement	C4 - Geometry	C5 – Data Analysis	Total	% of Items
DOK 1	6	7	3	4	7	27	45%
DOK 2	3	9	4	5	6	27	45%
DOK 3	0	1	2	1	2	6	10%
Total	9	17	9	10	15	**60**	100%
% of Items	15%	28%	15%	17%	25%	100%	

Content Clusters:

The content clusters represent the five content standards for mathematics, which students should acquire and apply for use in their everyday life. The themes listed below the content standard definition are those measured by the Nevada state assessment program at each specific grade level. See the grade specific Math CRT Item Specifications at http://nde.doe.nv.gov/Assessment_HSPE.htm for more details concerning each theme assessed.

C1- Numbers and Operations

Students will accurately calculate and use estimation techniques, number relationships, operation rules, and algorithms; they will determine the reasonableness of answers and the accuracy of solutions to solve problems, communicate, reason, and make connections within and beyond the field of mathematics. Students in high school will be assessed in the following areas:

Estimation
Computation
Number Theory

C 2 – Algebra

Students will use various algebraic methods to analyze, illustrate, extend, and create numerous representations (words, numbers, tables, and graphs) of patterns, functions, and algebraic relations as modeled in practical situations to solve problems, communicate, reason, and make connections within and beyond the field of mathematics. Students in high school will be assessed in the following areas:

Patterns
Variables and Unknowns
Expressions and Polynomials
Relations and Functions
Linear Equations and Inequalities
Algebraic Representation and Application

C 3 – Measurement

Students will use appropriate tools and techniques of measurement to determine, estimate, record, and verify direct and indirect measurements to solve problems, communicate, reason, and make connections within and beyond the field of mathematics. Students in high school will be assessed in the following areas:

Precision in Measurements
Formulas
Money
Ratios and Proportions

C 4 – Geometry

Students will identify, represent, verify, and apply spatial relationships and geometric properties to solve problems, communicate, and make connections within and beyond the field of mathematics. Students in high school will be assessed in the following areas:

Two-Dimensional Shapes
Congruence, Similarity and Transformations
Algebraic Connections
Lines, Angles and their Properties
Triangles
Logic

C 5 – Data Analysis

Students will collect, organize, display, interpret, and analyze data to determine statistical relationships and probability projections to solve problems, communicate, reason, and make connections within and beyond the field of mathematics. Students in high school will be assessed in the following areas:

Data Collection and Organization
Central Tendency and Data Distribution
Interpretation of Data
Permutations and Combinations
Experimental and Theoretical Probability

Depth of Knowledge (DOK)

The DOK levels represent a hierarchy based on complexity (rather than difficulty). The hierarchy is based on two main factors: 1) sophistication and complexity, and 2) the likelihood that students at the grade level tested would have received prior instruction or would have had an opportunity to learn the content. Some problems or tasks have a low depth-of-knowledge level because the knowledge required is commonly known and students with normal instruction at that grade level should have had the opportunity to learn how to routinely perform what is being asked.

DOK Level 1: Recall

Level 1 includes the recall of information such as a fact, definition, term, or a simple procedure, as well as performing a simple algorithm, reading an uncomplicated data display, or applying a formula. A one-step, well-defined, and straight algorithmic procedure should be included at Level 1. Some key words that could signify Level 1 include "identify," "recall," "recognize," "use," and "measure." The action verbs "describe," "interpret," or "explain" could be classified at different DOK levels, depending on the complexity of the task.

DOK Level 2: Use of Concepts and skills

Level 2 includes the engagement of some mental processing beyond a habitual response. A Level 2 task should require students to make some decisions as to how to approach the problem or task. Some keywords that generally distinguish a Level 2 item include "classify," "organize," "estimate," "make observations," "collect and display data," and "compare data." These actions imply more than one step. Interpreting information from a simple graph, or reading information from the graph, also is at Level 2.

DOK Level 3: Strategic Thinking and Problem Solving

Level 3 requires the use of reasoning, justifying, planning, using evidence, and a higher level of thinking than the previous two levels. In most instances, requiring students to explain their thinking is at Level 3. Activities that require students to make conjectures are also at this level. The cognitive demands at Level 3 are complex and abstract. The complexity does not result from the fact that there are multiple answers, but because the task requires more demanding reasoning. An activity, however, that has more than one possible answer and requires students to justify the response they give would most likely be at Level 3. Other Level 3 activities include drawing conclusions from observations; citing evidence and developing a logical argument for concepts; explaining phenomena in terms of concepts; and deciding which concepts to apply in order to solve a complex non-routine problem.