Figure 1.2: How to Read the CCSS Mathematics Standards for High School

The **conceptual categories** of the CCSS Mathematics Standards for High School are: Number and Quantity; Algebra; Functions; Modeling; Geometry; and Statistics and Probability. Each conceptual category consists of several domains, with the exception of Modeling.

Domains are larger groups of related standards. Standards from different domains may sometimes be closely related. For example, Number and Quantity has four domains (see appendix C, pages 165–169): the Real Number System (N–RN); Quantities (N–Q); the Complex Number System (N–CN); and Vector and Matrix Quantities (N–VM). An acronym accompanies each domain title.

Content standard clusters are groups of related standards. Note that standards from different clusters may sometimes be closely related because mathematics is a connected subject. The domain the Real Number System (N–RN) has two content standard clusters: (1) Extend the properties of exponents to rational exponents, and (2) Use properties of rational and irrational numbers.

Standards define what students should understand and be able to do. The two content standard clusters in the Real Number System domain include three standards: N–RN.1, N–RN.2, and N–RN.3.

1. Extend the properties of exponents to rational exponents
    - **N-RN.1:** Explain how the definition of the meaning of rational exponents follows from extending the properties of integer exponents to those values, allowing for a notation for radicals in terms of rational exponents. For example, we define $5^{1/3}$ to be the cube root of 5 because we want $(5^{1/3})^3 = 5^{(1/3)3}$ to hold, so $(5^{1/3})^3$ must equal 5.
    - **N-RN.2:** Rewrite expressions involving radicals and rational exponents using the properties of exponents.
2. Use properties of rational and irrational numbers.
    - **N-RN.3:** Explain why the sum or product of two rational numbers is rational; that the sum of a rational number and an irrational number is irrational; and that the product of a nonzero rational number and an irrational number is irrational.

Source: Adapted from National Governors Association Center for Best Practices & Council of Chief State School Officers, 2010, pp. 5, 60.