such thing as knowledge-free reasoning, knowledge-free skilled performance, or knowledge-free product development.

FACTUAL INFORMATION. Targets calling for *factual information* are often stated using verbs such as *knows, lists, names, identifies,* and *recalls*. Examples include "Identify and know the meaning of the most common prefixes and derivational suffixes" (Common Core State Standards Initiative, 2010a, p. 17 [hereafter cited as CCSSI, 2010a]), "Understand the absolute value of a rational number as its distance from 0 on the number line" (Common Core State Standards Initiative, 2010c, p. 43 [hereafter cited as CCSSI, 2010c]), and "Knows the nutritional value of different foods" (Kendall & Marzano, 1997, p. 552).

Some learning targets call for *procedural knowledge*: knowing how to do something. They often begin with the phrase *knows how to*, or the word *uses*, such as the target "Uses scientific notation to represent very large and very small numbers." Procedural knowledge usually involves knowing a protocol or memorizing a series of steps.

CONCEPTUAL UNDERSTANDING. When *conceptual understanding* is at the heart of a learning target, the target often begins with the word *understands*. A conceptual understanding learning target at the knowledge level means that the student can explain the concept. We would not consider this "low-level" knowledge; conceptual understanding is essential for reasoning effectively in any discipline. As the Common Core State Standards Initiative's description of the Standards for Mathematical Practice states: "Students 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 students, step back for an overview, or deviate from a known procedure to find a shortcut. In short, a lack of understanding effectively prevents a student from engaging in the mathematical practices" (CCSSI, 2010c, p. 8).

KNOWING VIA REFERENCE. Beyond knowing information outright, there is another way of knowing—knowing via reference. Not everything that we need to know needs to be learned "by heart." What, of the information students need, will we require they memorize, and what will we teach them to find if and when they need it? As our students become increasingly adept at using technology to search for information, we must carefully identify the information that it is important to have in memory. Will they memorize the list of prepositions (*above, aboard, about* . . .)? The table of periodic elements? The capitals of the 50 U.S. states? Maybe, maybe not. As we know, there isn't enough time to teach (or for students to learn) everything of importance—we can easily fill the year teaching facts, thereby losing instructional time for learning targets beyond the knowledge level. Where is the balance? One way to address this problem is to determine which knowledge learning targets will be important for students to know outright and which they will be required to know via reference.