activities that keep students busy but take them "off-road" when it comes to providing evidence of what they have learned.

- **Pacing guides.** When a pacing guide or similar document is flexible and allows teachers to exercise sound professional judgment in response to student needs, it can be a helpful navigation tool. When such guidelines leave little to no room for detours or alternative routes, they restrict the teacher's ability to plan and differentiate thoughtfully.
- **Textbooks or packaged programs.** A well-designed textbook or packaged program can provide clarity, organization, and ideas that have been carefully curated by experts. It's akin to a comprehensive travel guide. But, rather than being *resources*, as they are intended to be, these materials too often become *the curriculum*. As a result, teachers shift to "autopilot," taking routes that miss the most important sites or lead to a different destination altogether.

None of these things—standards, activities, pacing guides, or packaged programs—is in itself an *obstacle* to focusing curricular goals. Rather, it is how schools and teachers treat them that can take curricular planning efforts off course.

Most teachers plan and implement grade-level content in subject-specific or interdisciplinary curricular units that span anywhere from two to six weeks, depending on scope. Typically, a *unit* includes a set of clearly articulated and closely connected learning goals, formative and summative assessment of those goals, and a sequence of learning experiences delivered through lessons that flow from the goals and equip students for the assessments (Wiggins & McTighe, 2005).

This chapter focuses on how best to determine and articulate the learning goals that make up the destination. Subsequent chapters focus on assessment of and instruction around those goals.

Using Concepts and Big Ideas to Articulate the "Worth" of a Destination

Planning a unit is much like planning a road trip. Deciding where to go is an obvious and critical first step, because, as Yogi Berra (2001) put it, "If you don't know where you're going, you might not get there." Wiggins and McTighe (2005) urge teachers to "begin with the end in mind" when designing units to ensure that goals, assessment, and instruction are aligned.

Let's return to San Francisco as the destination. There are many possible and worthy reasons for going to this city: taking a business trip, enjoying a vacation, visiting relatives, attending a conference, studying earthquake-resistant buildings, or sampling the cuisine, to name a few. When a friend asks, "Why are you going to San Francisco?" you wouldn't reply, "To go to San Francisco." Such a response would exasperate the friend and mask your real purpose for going!

Along the same lines, the reason for teaching something isn't the existence of the thing itself, whether it exists in the standards, in a packaged program, in a binder, or on a list. The contents of such documents are there because they have the potential to equip students with ideas, knowledge, and skills that can be used in and transferred to real-life situations.

One valuable and efficient way for teachers to articulate the worth and focus of a unit is to use *concepts.* Concepts are broad, abstract ideas—usually consisting of one to two words—that frame, unite, and organize the seemingly disparate chunks of information that are often presented as curriculum (Bransford, Brown, & Cocking, 2000). They connect topics, content, and skills to the essence of the discipline or subject area that is being studied.

Concepts are universal and timeless in their application and provide an integrated lens through which to examine a mountain of content and skills (Erickson, 2002). Various curricular topics and texts can fit under the umbrella of a single concept because they share common attributes. For example, in social studies, students could examine every conflict they study through the lens of *change.* A kindergarten teacher could unite her entire math curriculum around the concept of *patterns*.

There are two kinds of concepts: general and discipline-specific. General concepts are those that are organizers within and across multiple disciplines, such as *time, perspective, community*, or *conflict.* Discipline-specific concepts provide ways of classifying or categorizing topics and knowledge within a particular discipline, such as *symmetry* (mathematics), *needs and wants* (social studies), *habitat* (science), *fluency* (reading), *voice* (writing), *color* (art), or *fitness* (physical education). In this chapter, we have included a list of general and discipline-specific concepts for reference (see Figure 2.1, p. 44).

Carefully selected concepts provide openings through which students can tunnel their way into the core of a subject to discover its deep principles, issues, and controversies. For example, a teacher could organize a science unit around the concept of *interdependence* by consistently asking students to explore the ways in which changes to one part of a system (e.g., a plant, the human body, or the food chain) would affect all the other parts of that system. This type of concentration also invites interdisciplinary connections. For example, in social studies, the same teacher might focus on the interdependent nature of communities (e.g., members of a community have *needs and wants*, which are met by *goods and services*, which are bought and sold by *consumers and producers*).

Keep in mind that concepts do *not* trump or replace facts. Instead, they give students ways to *organize* facts and other knowledge so that they can retrieve them and apply what they learn to new situations as well as acquire new information (Bransford et al., 2000; Hattie, 2012).

Using concepts as an organizational tool makes even more sense in light of the ever-expanding body of knowledge in all subjects. For example, potential content for

history lessons is expanding every hour of every day! Information that decades ago was accessible only in print and to a privileged few can now be retrieved by billions of people in a matter of seconds. If units and lessons are to help students learn how to wade through and make sense of information, then concepts are key.

Getting from Topics to Concepts

So how can teachers go about efficiently identifying the uniting concepts for their disciplines, courses, units, and lessons? Silver and Perini (2010) offer a good first step in getting to the most powerful ideas: by taking the unit, lesson topic, focus, or text and considering what it is a "study" in, like this:

_____, a study in _____.
(Topic/Focus/Text) (Concept)

A unit on *insects*, for example, might be viewed as a study in *structure and function*. A unit on *the American Revolution* could be a study in *conflict over power*. *Addition and subtraction* might be a study in *balance*. A series of lessons on *opinion writing* could be a study in *perspective*. A look at the work of Mo Willems could be a study in *character* or *voice.*

Concepts are also useful for elevating the goals for teaching a particular story or text beyond skill practice. For example, *Frog and Toad Together* by Arnold Lobel is not a study in making inferences, but it could be a study in *relationships*. By studying the text through the lens of Frog and Toad's *relationship*, students will naturally engage in making inferences and finding evidence from the text, supported by rich questions.

This approach also helps teachers either move away from or upgrade units that focus on narrow topics with few or no transferable skills, powerful ideas, or connections to students' lives. *Native Americans* could be a study in *identity* and *survival*. *Rocks* are potentially a study in *change over time.* Sometimes, the topic itself needs to be broadened in order to make a conceptual connection. *Penguins* is a much more limited topic, for example, than *Arctic animals,* which could be a study in *habitats* or *survival*.

Although there's no special magic in a prompt like "_____, a study in _____"—and there are myriad other tools to help teachers consider a unit's purpose (see McTighe & Wiggins, 2004; Wiggins & McTighe, 2011)—it can be invaluable for quickly getting to the heart of what students should be studying.

Learning Goals: Getting Specific About the Destination

Concepts are only the *beginning* of unit and lesson design. They get students headed in a worthwhile direction, but they are not specific enough to constitute *learning goals*. In other words, saying, "I'm teaching about the structure and function of animal parts" is a good start, but teachers must also develop specific, assessable learning goals for the unit and for individual lessons and tasks.

Sorting, Classifying, and Counting Objects, a Study in Attributes

(Based on Common Core Standards for Mathematical Practice, Kindergarten, K.MD.3)

Understanding Goals and Essential Question

EQ: How can we "see," count, and put objects in order?

- **U1:** Objects can have similar and different *attributes. Kidspeak:* Objects can look the same in some ways and different in other ways.
- **U2:** Objects can be sorted into categories that represent the *attributes* they share. *Kidspeak:* We can group objects together by the ways they look the same.
- **U3:** The number of objects in a category can be counted. The categories can be put in an order. *Kidspeak:* We can count how many objects there are of a kind and put them in order of how many there are of each one.

Knowledge Goals

- **K1:** Key terms/concepts: *attribute, category, order (least to greatest)*
- **K2:** Counting numbers 1–10

Skill Goals

- **S1**: Classify objects into given categories.
- **S2:** Count the number of objects in a category.
- **S3:** Sort categories of objects by count (i.e., the number of objects in the category).

Upper-Elementary Examples

Creating and Interpreting Graphs from Data, a Study in Communication

Understanding Goals and Essential Questions

- **U1:** Graphs are visual representations that *communicate* relationships between data points. (**EQ1:** What's a graph and what does it "do"?)
- **U2:** In order to be useful, a graph must *communicate* information clearly. (**EQ2:** What makes a graph useful?)
- **U3:** Different types of graphs are "good for" *communicating* different information about data. (**EQ3:** Which kind of graph is "best"?)

Knowledge Goals

- **K1:** Parts and purposes of different kinds of graphs (bar graph, line graph, circle graph, type of vertical and horizontal bar graphs [side-by-side, stacked])
- **K2:** Benefits and limitations of different kinds of graphs

Skill Goals

- **S1:** Represent and interpret data using different kinds of graphs.
- **S2:** Evaluate the benefits and limitations of using different kinds of graphs in presenting a given data set.

Measurement Conversions, a Study in Equivalence

(Based on Common Core Standards for Mathematical Practice, Grade 4, 4MD.1-3)

Understanding Goals and Essential Questions

- **U1:** Measurements can be converted using mathematical operations to find *equivalence*. (**EQ1:** How can we change one measurement into another measurement?)
- **U2:** Changing one measurement into another measurement can affect precision. (**EQ2:** What can "happen" when we change one measurement into another?)
- **U3:** Using measurements that are *equivalent* can help solve real-world problems efficiently. (**EQ3:** When are equivalent measurements useful or necessary?)

Knowledge Goals

- **K1:** Units are *equivalent* when they represent the same measurement.
- **K2:** *Converting* measurements involves changing one kind of measurement to another kind of measurement.
- **K3:** Relative sizes of measurement units within one system of units including km, m, cm; kg, g; lb, oz.; l, ml; hr, min, sec.
- **K4:** Units of measurement for length and volume in U.S. customary and metric systems

Skill Goals

- **S1:** Rank units of measurement (e.g., least to greatest, greatest to least).
- **S2:** Convert measurements from one unit to another using appropriate mathematical operations.
- **S3:** Express measurements in a larger unit in terms of a smaller unit (and vice versa) within one system of measurement.
- **S4:** Use the four operations to solve problems involving measurement and conversion of measurement from a larger unit to a smaller unit.
- **S5:** Represent equivalent measurements in a chart or table.