

**S T U D E N T
E N G A G E M E N T
T E C H N I Q U E**

1

Background Knowledge Probe

Essential Characteristics

PRIMARY MODE	Individual
ACTIVITY FOCUS	Writing
DURATION OF ACTIVITY	Single Session
ONLINE TRANSFERABILITY	High

DESCRIPTION AND PURPOSE One of the most important principles in both motivation and learning is working at a level that is appropriately challenging. Activities that are too easy are boring, activities that are too hard are discouraging, and either extreme leads to disengagement. The "Background Knowledge Probe" is a classroom assessment technique (Angelo & Cross, 1993, pp. 121-125) that helps teachers determine the most appropriate level of difficulty.

Teachers develop short, simple, focused questionnaires that students fill out at the beginning of a course, at the start of a new unit, or prior to introducing a new topic. These probes help teachers identify the best starting point for the class as a whole. They also identify under-prepared students for whom remedial work may be needed and extremely well-prepared students who may benefit from tasks that are more challenging. The probes also help learners foreground their prior knowledge so that they can better interpret and assign meaning to new information.

- STEP-BY-STEP DIRECTIONS**
1. Before starting instruction on an important new concept, subject, or unit, consider what students may already know about it. Although their knowledge may be fragmentary, simplistic, or even incorrect, try to determine at least one point that most students are likely to know. Using this point as the starting place, make a list of less familiar points.

2. Based on your list of points, prepare two or three open-ended questions or a handful of short-answer questions that will probe the students' existing knowledge or understanding. Avoid specialized vocabulary that may be unfamiliar to students because that can interfere with their recall.
3. Write your questions on the board, an overhead transparency, or a presentation slide, or prepare a handout.
4. Explain to students that the purposes of the exercise are (1) to help them recall any relevant prior knowledge so that they can better connect it to what you will be teaching them, (2) to help them start the process of organizing their knowledge, and (3) to help you determine the most appropriate level at which to begin instruction. Assure students that their answers will not be graded.
5. After students have completed the probe, consider forming students in to pairs or small groups to share their responses.

EXAMPLES

Political Science

This professor knows that students start his class with a wide range of backgrounds in history and political science. To get a better sense of what students already know, he distributes a questionnaire that asks students to self-assess their current knowledge on a variety of names, terms, and concepts. An excerpt from the survey is provided in Exhibit 12.1.

The questionnaire contains the key terms and names such as Napoleon, the Constitution of the United States, and James Madison. Students submit their answers, which the professor quickly tallies and uses this profile of students' current knowledge to determine which topics he will spend more time on in class (Angelo, 2001).

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Human Anatomy and Physiology

Professor Tish Oosells chose this SET to introduce a unit on the heart. She distributed a handout with an image of the exterior and interior structures of the heart and fill-in lines and arrows pointing to the different structures. She asked students to independently write in the names of as many of the structures they could recall. Then they worked in pairs to pool their knowledge to fill out a single handout, using three different colored pencils to represent individual and shared knowledge.

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EXHIBIT 12.1.**Sample Questions from Political Science Survey***Political Science 100, Section 20**Background Knowledge Probe #1*

Please circle the letter that best represents your current knowledge:

1. Federalism
 - a. Have never heard of this
 - b. Have heard of it, but don't really know what it means
 - c. Have some idea what this means, but not too clear
 - d. Have a clear idea what this means and can explain it
2. Separation of powers
 - a. Have never heard of this
 - b. Have heard of it, but don't really know what it means
 - c. Have some idea what this means, but not too clear
 - d. Have a clear idea what this means and can explain it

Music of Multicultural America

This professor uses a "Background Knowledge Probe" as both a pre- and post-assessment tool. She finds that the open-ended nature of the prompt helps capture a wide range of student knowledge and that the authentic nature of the task appeals to students. In addition to helping her assess students' starting

points, the grid (Exhibit 12.2) allows her to give an in-class presentation to students with special expertise whom she can consider inviting to give an in-class presentation.

At the end of the term, she has students fill out the grid again to assess how well they have achieved the course's learning goals. Students compare their responses on the pre- and post-grids, and they often report that it is gratifying to see how much they have learned. To ensure students are drawing from long-term rather than short-term memory (see T/S 20, "Teach for retention" in Chapter 8 for more information), she does not inform students of the assessment in advance, and she also assures students the results will not negatively affect their course grade. She quickly evaluates the grids by assigning one point for each substantive information item and gives the points to students as bonuses.

ONLINE IMPLEMENTATION

This SET is easily implemented online as an assignment.

VARIATIONS AND EXTENSIONS

- Ask students to pair up and share insights or observations regarding their levels of background knowledge. Or have them pair up to create a composite assessment based on their combined knowledge.

EXHIBIT 12.2.

Music Background Knowledge Probe

Music of Multicultural America

Knowledge Grid

Name _____

Directions: You are hosting a visitor from another country who asks you about American music. At first you can't think of anything but the latest pop hits, but then you remember (1) how America is a nation of immigrants, (2) how immigrants brought the music traditions of their home countries with them to America, and (3) how the cross-fertilization of immigrant styles led to the creation of the new kinds of music that we call "American music." Use single words and short phrases to indicate the info and ideas you use to show your visitor you know what you are talking about.

The Social/Historical Context	The Music (Representative Artists, Structural Characteristics, etc.)
Native American music Gospel Blues Jazz Country Urban folk revival Rock-'n'-roll	
Tejano, Banda Salsa, Reggae Hip-hop, Rap	

- Consider using the information you glean to pair students into mentor relationships.
- "Knowledge Surveys" (Nuhfer and Kripp, 2003) are a more extensive approach to determining what students know. They can be used to assess information for an entire course, thus avoiding the piecemeal approach that can result from assessing background at the unit or task level. See T/S 38, "Assess students' starting points," in Chapter 10 for a more detailed description of this assessment method.
- In a variation called "Con-Venn-Tions" (Rogers, 1997), students are given index cards and asked to each write the 5–8 most significant points they know with respect to a given topic, one idea per card. In pairs, students share and organize their ideas, sorting the cards into

three piles consisting of unique and shared ideas in order to develop a Venn diagram containing their pooled knowledge about the topic. They can use an actual Venn diagram or a simple table created in a word-processing program (see Table 12.1).

OBSERVATIONS AND ADVICE

If a student has little or no background knowledge, this activity may be demoralizing. If you suspect that some students in your class may fit this category, consider spending time up front building trust by assuring them that you want all students to be able to succeed and reinforcing them the ways you can help them succeed is by knowing all the students' starting places.

If what students already know is far more or far less than you expect, this SET can be overwhelming because it can challenge you to make major revisions in your instructional plans. Therefore, do not use this activity if you do not have the time, energy, and willingness to make adjustments if necessary.

KEY RESOURCES

- Angelo, T. A., & Cross, K. P. (1993). Background knowledge probe. *Classroom assessment techniques*. San Francisco: Jossey-Bass, pp. 121–125.
- Angelo, T. A. (2001). Speech at opening plenary session of the Central California Conference on Assessing Student Learning, California State University, Fresno, April 27.
- Nuhfer, E., & Knipp, D. (2003). The knowledge survey: A tool for all reasons. *To Improve the Academy*, 21, pp. 59–78. Retrieved from http://www.wisn.edu/~cl/faculty/dev/~knows_s_sing/~/www21.htm
- Rogers, S. (1997). *Motivation and Learning: A teacher's guide to building excitement of learning and igniting the drive for quality*. Golden, CO: Peak Learning Systems.

TABLE 12.1.
Sample Table for “Con-Venn-Tions”

Student 1's Ideas	Shared Ideas	Student 2's Ideas