Topical Essential Questions: *What is magnetism? What is electricity? What is gravity?*

Overarching Essential Questions: *If a force can't be directly seen, how do we know it is there? What makes a theory "scientific" as opposed to merely speculative? In what ways are forces in physics similar to intangible "forces" in human conduct? Is psychology more like physics or history?*

Such sets don't just offer a balance between topical, overarching, guiding, and open inquiries. A *family* of questions signals lively and iterative movement between narrow and broad inquiries, and between tentative and deeper understandings and further needed inquiries. The art of teaching for understanding requires a delicate mix of open and guiding as well as topical and overarching inquiries. By striking the right balance, we show that intellectual freedom and creativity are valued alongside the most powerful insights of experts.

Tips for generating essential questions

How might we come up with the best family of questions for framing our units? We might begin to identify useful topical questions by using the format of the quiz show *Jeopardy*. Given the content found in a textbook—the "answers" to be learned—what is an important question about a big idea (and the related research it suggests) for which the textbook provides a good summary answer? Don't get bogged down in all the distinctions about types of questions made earlier—just brainstorm a list of good questions in which to anchor the unit.

Let's return to the "three branches of government" example. If that phrase is an "answer," then what is a good question that would help students come to understand the underlying idea and its value? How about, "Why do we need a balance of powers? What's the alternative?" Or we could frame the challenge this way: "What were some of the questions our Founders were asking *themselves* that led to their proposal?" A more specific question for the unit might be this: "Why did the Federalists advocate for a balance of powers, and what were the arguments on the other side?"

Once we have identified one or more topical questions, we need to consider broader questions that will take us beyond the specific content in a provocative and transfer-rich way. Consider this: "What structure of government best suits the fact, to quote the *Federalist Papers,* that 'all men are not angels'? What follows about government if you reject this premise about human nature?" Let's go even broader and more arguable: "When is it wise to share power? When do we gain (and when might we lose) power by sharing it?" All of these more overarching questions are thought provoking, have transfer value, link to prior knowledge, and require core content—in other words, they meet our criteria.

Another practical approach is to derive essential questions from national or state content standards. Review a set of standards and identify the key nouns that recur (i.e., the important concepts) and make them the basis of a question. In the following examples, notice how interrogatives have been fashioned from declarative statements.

Life Science: *All students will apply an understanding of cells to the functioning of multi-cellular organisms, including how cells grow, develop, and reproduce. (From Michigan Science Standards)*

Topical Essential Questions: *How can we prove that cells make up living things? If we're all made of cells, why don't we look alike?*
Overarching Essential Question: *How do scientists prove things?*

Dance: *Understanding dance as a way to create and communicate meaning. (From National Standards for Arts Education)*

Topical Essential Questions: *What ideas can we express through dance? How can motion convey emotion?*
Overarching Essential Questions: *In what ways do artists express what they think and feel? In what ways does the medium influence the message? What can the artist do that the nonartist cannot?*

Physical Education *(6th grade): Applies movement concepts and principles to the learning and development of motor skills. (From National Association for Sport and Physical Education)*

Topical Essential Questions: *How do we hit with greatest power without losing control? How important is follow-through for distance and speed?*
Overarching Essential Questions: *What kind of practice "makes perfect"? What feedback will enhance or improve performance most?*

A related process is to derive essential questions from the enduring understandings identified in Stage 1. For example, the understanding that "living things adapt in order to survive harsh or changing environments" naturally suggests a companion question: "In what ways do living things adapt to survive?"

In addition to their function as indicators of understanding in Stage 2, the six facets are also a useful framework for generating provocative questions. Figure 5.3 presents a list of question starters for each facet.

Clearly the learning plan will require curriculum designers to map out a sensible progression for moving from the accessible to the obscure, but the challenge in Stage 1 is related to backward design: What are the questions we want students to be *eventually* able to address well, irrespective of whether we think they can handle such questions at this moment? That, after all, is why Essential Questions are in Stage 1: the ability to ask and thoughtfully consider such questions is a desired result, not just a teaching ploy.

Design Tip

Teachers in UbD workshops frequently ask how many essential questions they should have for a unit. We recommend a variation on the Marine Corps recruiting slogan: We're looking for a few good questions. If they are truly essential, they can (and should) establish priorities and help uncover all key ideas. Do not state questions that you do not intend to actively investigate through discussion, research, problem solving, and other means.

Figure 5.3

Question Starters Based on the Six Facets of Understanding

Explanation

Who _____? What _____? When _____? How _____? Why _____?
What is the key concept/idea in _____?
What are examples of _____?
What are the characteristics/parts of _____?
Why is this so?
How might we prove/confirm/justify _____?
How is _____ connected to _____?
What might happen if _____?
What are common misconceptions about _____?

Interpretation

What is the meaning of _____?
What does _____ reveal about _____?
How is _____ like _____ (analogy/metaphor)?
How does _____ relate to me/us?
So what? Why does it matter?

Application

How and when can we use this (knowledge/process) _____?
How is _____ applied in the larger world?
How could we use _____ to overcome _____
(obstacle, constraint, challenge)?

Perspective

What are different points of view about _____?
How might this look from _____'s perspective?
How is _____ similar to/different from _____?
What are other possible reactions to _____?
What are the strengths and weaknesses of _____?
What are the limits of _____?
What is the evidence for _____?
Is the evidence reliable? Sufficient?

Empathy

What would it be like to walk in _____'s shoes?
How might _____ feel about _____?
How might we reach an understanding about _____?
What was _____ trying to make us feel/see?

Self-Knowledge

How do I know _____?
What are the limits of my knowledge about _____?
What are my "blind spots" about _____?
How can I best show _____?
How are my views about _____ shaped by _____
(experiences, assumptions, habits, prejudices, style)?
What are my strengths and weaknesses in _____?

Tips for using essential questions

The following practical suggestions can help you apply essential questions in your classroom, school, or district:

- Organize programs, courses, units of study, and lessons around the questions. Make the "content" answers to questions.
- Select or design assessment tasks (up front) that are explicitly linked to the questions. The tasks and performance standards should clarify what acceptable pursuit of, and answers to, the questions actually looks like.
- Use a reasonable number of questions (two to five) per unit. Make less be more. Prioritize content for students to make the work clearly focus on a few key questions.
- Frame the questions in "kid language" as needed to make them more accessible. Edit the questions to make them as engaging and provocative as possible for the age group.
- Ensure that every child understands the questions and sees their value. Conduct a survey or informal check, as necessary, to verify this.
- Derive and design specific concrete exploratory activities and inquiries for each question.
- Sequence the questions so they naturally lead from one to another.
- Post the essential questions in the classrooms, and encourage students to organize notebooks around them to make clear their importance for study and note taking.
- Help students to personalize the questions. Have them share examples, personal stories, and hunches. Encourage them to bring in clippings and artifacts to help make the questions come alive.
- Allot sufficient time for "unpacking" the questions—examining subquestions and probing implications—while being mindful of student age, experience, and other instructional obligations. Use question and concept maps to show relatedness of questions.
- Share your questions with other faculty to make planning and teaching for coherence across subjects more likely. To promote overarching questions schoolwide, ask teachers to post their questions in the faculty room or in department meeting and planning areas; type and circulate questions in the faculty bulletin; present and discuss them at faculty and PTSA meetings.

The importance of framing work around open questions

> Let me suggest one answer [to the problem of going into depth and avoiding excessive coverage] that grew from what we have done. It is the use of the organizing conjecture . . . [which serves] two functions, one of them obvious: putting perspective back into the particulars. The second is less obvious and more surprising. The questions often seemed to serve as criteria for determining where [students] were getting and how well they were understanding.
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> —Jerome Bruner, *Beyond the Information Given,* 1957, pp. 449–450