



PRINCIPLE 1: AIM
Clearly and specifically define your learning objectives.

Example 1: Distinguish learning goals from teaching goals

As instructors with deep disciplinary knowledge, it's natural to think about topics you want to cover, texts you want to assign, and questions you want to raise in your courses. These kinds of teaching goals help focus your own planning, but don't necessarily convey what you want your *students* to be able to know and do through taking the course.

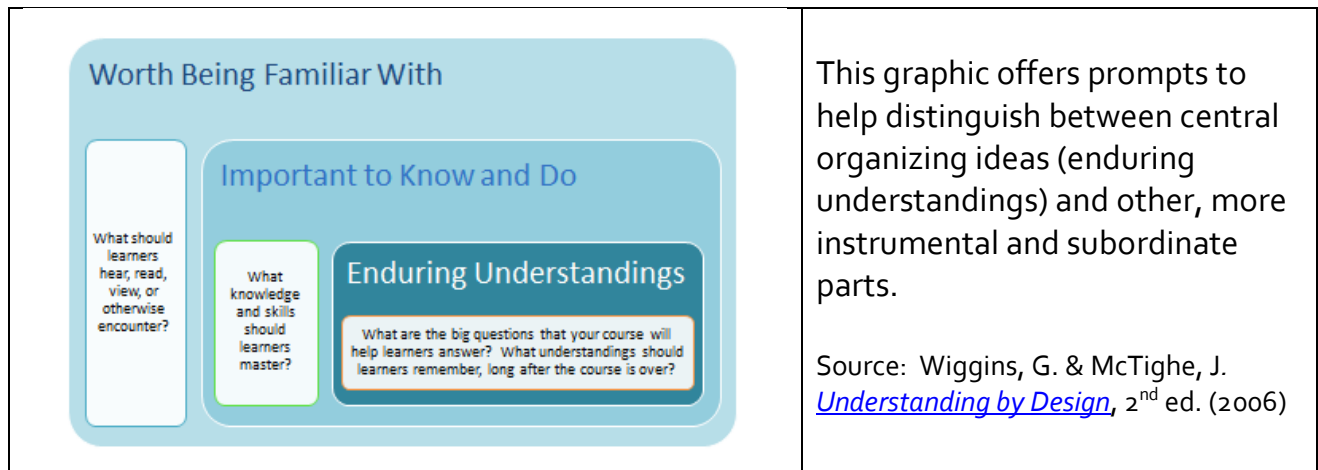
For example, in a course on cognitive psychology, one teaching goal might be to present to students the process of human language acquisition. The learning objectives connected *to* that broader goal, though, might be for students to be able to describe major theories of language development, articulate gaps within theories of human language acquisition, or generate alternative hypotheses to explain particular language acquisition failures.

Helping students see what actions they'll be taking during the course, and why, will give destination and purpose to their work, and thus increase their attention and engagement.

Example 2: Identify and underscore the course's "big ideas"

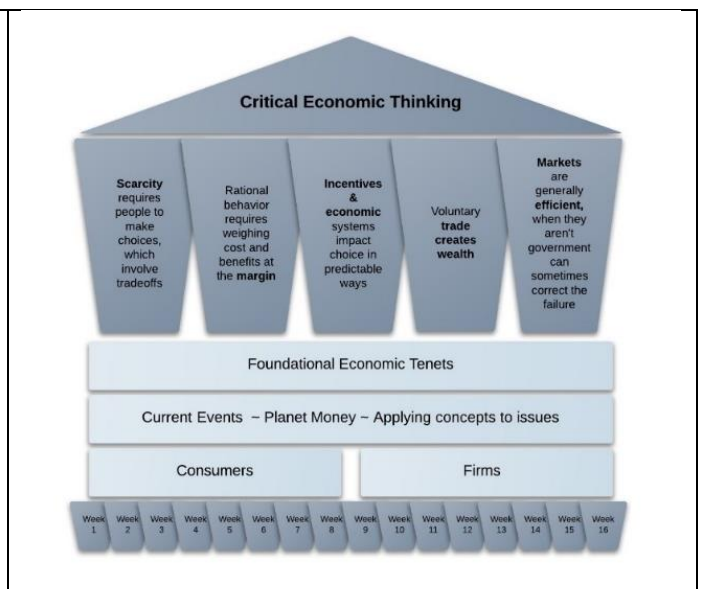
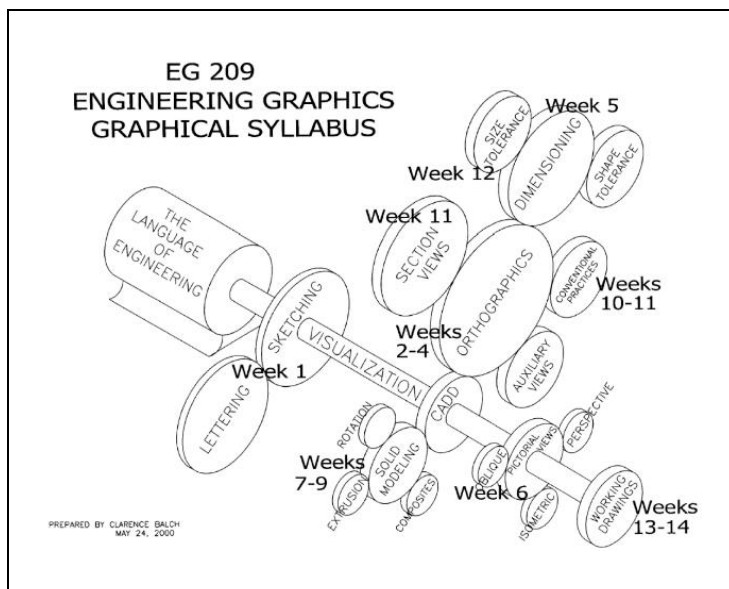
For learners new to a subject, all information can sometimes seem equally relevant, whereas those with more expertise see what concepts are subcategories of other, more important and overarching ideas. In designing your course, identify the core concepts, or "enduring understandings" (see graphic below) that will be the foundation of your course—things you want students to absorb and integrate into their ways of thinking and acting far into the future.

HKS' Dan Levy calls these "airport concepts" because he says he wants his students to remember them five years from now when he runs into them at the airport; during the course, whenever the class focuses on such an idea, he underscores its importance by saying "this is an airport concept."



Example 3: Create visual representations or roadmaps of the course

In addition to the verbal description or outline in the syllabus, create more compact and visually compelling ways to represent key goals, concepts and practices from the course. The images below offer two examples (from Engineering and from Economics) of such graphics; each conveys the progression and organization of topics over time, using visual metaphors to convey the building blocks of knowledge and the inter-relationship of ideas in the course. Such snapshots convey clarifying structures that give students a framework for knowing what to expect and how each piece fits together.



Source: Nilson, L.B. [*The Graphic Syllabus and the Outcomes Map: Communicating Your Course*](#) (2007)

Source: [*The Graphic Syllabus*](#), Reinert Center for Transformative Teaching & Learning, St. Louis Univ.



PRINCIPLE 2: DETECT

Find appropriate ways to gauge what your students know and don't know.

Example 1: Surface prior knowledge as the class begins

Tapping into what they already know about a subject can help students learn and retain more. Not all knowledge is created equal, however. Sometimes students apply prior knowledge inappropriately or hold misconceptions that can hinder learning. Formative assessments done at the start of the semester can give you an opportunity to gauge student understanding and help you uncover common misconceptions, so you can adapt your teaching to each new class of students.

- **Prior Knowledge Assessment:** At the beginning of the semester, gauge your students' pre-existing knowledge and skill levels through experience surveys or performance assessments. A survey of what they have learned in the past will give you a sense of what students *believe* they know, whereas a performance assessment (such as problems to complete) will give you a better sense of what they *actually* know and can do (for example, whether they can simply define concepts or also apply them to novel situations). [Ambrose, S., et. al. *How Learning Works* \(2010\)](#)
- **Spot the Misconceptions:** As an ice breaker, post signs around your classroom with statements about your subject matter and have students vote on whether each is true or false. Include some common misconceptions. For example, in a biology course, you might write, "Evolution is just change over time" or in an American history course, "The driving cause for the Civil War was slavery." Encourage students to talk to each other as they decide on their answers. Reconvene the class and discuss each statement, explaining any misconceptions or indicating that you'll explore them further at a future date. ([Lansing Community College Center for Teaching Excellence](#))

Example 2: Start class where they are

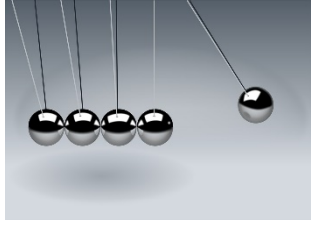
When students recall what they understand on a given topic, whether learned in a previous course or through personal experience, it helps them better integrate new material on that topic. These techniques help students activate prior knowledge and detect gaps or misconceptions. Use class time to give students immediate feedback, which can benefit their learning.

- **Start Where They Are:** Introduce your topic for the day and ask your students to write for a few minutes what they know about the topic and then share what they've written with a classmate. Ask for a few pairs to share out what they discussed, making a mental note of any misconceptions that surface. As you lead class that day, refer to student responses so you can correct misconceptions or help students make connections between the class content and their own ideas and experiences. ([Lang, J. M. \(January, 2016\). "Small Changes in Teaching: The First Five Minutes of Class," *Chronicle of Higher Education*](#))
- **Reading Response Briefs:** As profiled in [The Learning Loop](#), HGSE's Candice Bocala asks students to write 2-3 page "reading briefs" before class; her teaching team reviews them to identify common questions, misconceptions or insights that she can incorporate into her lecture. This allows her to highlight connections between students' ideas and major concepts in the course. Each student also gets feedback on their reading brief so that they can assess their own learning.

Example 3: Poll during class

Use polling as an informal way to gauge student learning or to surface misconceptions during class.

- **In-Class Polling and Peer Instruction:** As showcased in [HGSE's Instructional Moves](#), HKS faculty Dan Levy creates polls that ask students to solve a problem that demonstrates their level of comprehension. He administers these polls in class, first checking the results privately. If most students have answered correctly, he continues with the lecture. If student results are split, he draws on FAS faculty Eric Mazur's methods of peer instruction, asking students to work together to debate the answer and clarify misconceptions.



PRINCIPLE 5: ACTIVATE

Provide well-timed, varied, contextual opportunities for students to elaborate and practice what they've learned.

Example #1: Mix interactive lectures and case discussions

It can be difficult in a single semester to teach challenging theoretical content *and* connect that content to real-world applications. In the joint-listed course he taught for many years on *Markets and Market Failure with Cases*, HKS and GSD's Tony Gomez-Ibanez addressed this dilemma by alternating class sessions between lecturing interactively and facilitating case discussions.

Sometimes it meant teaching the case before presenting the theory, as he did with a case on a global coffee crisis. In the case session, he used the coffee crisis to unearth principles of supply and demand, which he then used to flesh out the theoretical model in the next class session. In other instances, he presented the theory class first and then challenged students to apply the simplified introductory theory to the (somewhat constrained) messiness of the real world. For example, after learning about natural monopolies, he then asked his students to weigh in on a fight between Comcast and Verizon as internet providers in Philadelphia. In doing so, he helped his students better grasp the content and transfer it to diverse contexts.

Example #2: Use consultancies to practice key skills

In consultancies, presenters share specific problems from their own practice with groups of peers; groups then use [structured protocols](#) to help the presenter think about the problem in expansive and creative ways. [The Harvard Teacher Fellows \(HTF\) program](#) uses consultancies throughout their two-year program to help teacher candidates improve particular skills, such as building community in the classroom, fostering key dispositions, and becoming a reflective practitioner.

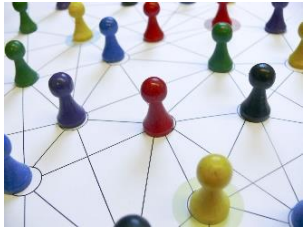
When they first introduce consultancies, HTF faculty members tend to lead and heavily structure the conversations. Over time, they release more and more control (both

preparation and facilitation) to students. By engaging in consultancies over time with their peers, these students see the complexities of teaching playing out in different settings, and have a venue for analyzing how their growing knowledge base of teaching impacts their evolving practice.

Example #3: Give two-stage exams

Exams are a well-established method for motivating learning through studying and for assessing learning by grading. Two-stage exams deliver additional value by becoming learning experiences in themselves. In the first stage, students take a traditional exam as individuals, and in the second, students work in small groups to revisit a subset of questions from the stage 1 exam, and submit an answer developed collectively. The subset of questions tends to be the harder ones, thus creating dynamic conversations between competing understandings and answers.

HKS faculty Dan Levy and Teddy Svoronos use two-stage exams in their quantitative courses. They found that in the past, even though their exams are cumulative throughout the semester, only 38% of students even looked at midterm exam solutions. By contrast, two-stage exams force students to think through their own answers and evaluate their accuracy in comparison to those of their peers. They also help students work on collaboration skills, which is of particular value in a profession where most problems addressed by groups, not individuals.



PRINCIPLE 7: CONNECT

Get to know your students, and create ways for them to get to know you, each other, and your discipline.

Example #1: Pre-course survey

To hit the ground running at the start of the semester, ask students to fill out a survey before the first day of class that allows them to share useful information about their relevant background and interest. Information solicited can include where they are from, a few interesting personal facts, their academic passions, key professional roles they have played, their interest and experience in your course content, and anything worth knowing about how they learn best and with what they struggle. This information can then be used throughout the course in a variety of ways.

- Harvard Kennedy School's Dan Levy administers a pre-course survey and creates a user-friendly database of the information in [Teach.ly](#), a platform he helped create. He reads the information before the course begins so he can tailor his overall approach to the semester. He also looks at student profiles before they attend office hours to get a sense of how best to connect with and assist them. Finally, he searches the database prior to particular class sessions to see if there is expertise in the room about the topic or context, and if so, devises ways to leverage it strategically in the discussion.
- Gene Thompson-Grove, a facilitator for the [School Reform Initiative](#), administers a similar survey in advance of professional learning institutes. Early in the institute, she shares a summary of participants' self-reported areas strengths and opportunities for growth, which they then discuss in small groups. This activity helps participants see what they have to learn from and teach each other, as well as what they are excited to learn about collectively.

Example #2: Student discussion leadership

Student-led discussions can enable students to take ownership over their learning, as well as build strong peer relationships. As documented in [HGSE's Instructional Moves project](#), Tim McCarthy has students work in pairs to plan and lead discussion for different class sessions in his FAS seminar class on Stories of Slavery & Freedom. McCarthy significantly scaffolds the experience, modelling how to lead an effective discussion in this context, and meeting with each pair to help them plan their session. The students collaborate to create and execute their plan, and in doing so share their own voice and intellectual approach with their classmates.

Example #3: Sustained group work over the course of the semester

Learning sciences research has shown the significant efficacy of having students work in groups. One way to harness this power, and build relationships in the process, is to create small groups that work together over the course of the semester.

- Throughout their first-year curriculum, Harvard Medical School employs [case-based collaborative learning](#), where students learn foundational content online before class so that class time can be spent exploring realistic medical cases. Students work in the same groups of four for every class of the semester, helping each other learn the relevant content and skills.
- In her course on Partnering with Youth in Educational Research and Practice, HGSE's Gretchen Brion-Meisels puts students into small groups to workshop each other's semester-long projects. She periodically allocates class time for these groups, where students share progress, present sticking points, and provide peer feedback. These interactions help shape the projects over time, while allowing students the chance to get to know each other through academic connections.



PRINCIPLE 9: ASSESS

Determine what went well and could use improvement.

Example 1: Real-Time Check-Ins

Check in with students throughout class to make sure you're all on the same page and make adjustments on the spot, as needed. Real-time check-ins also allow your students to see they're not alone in their experiences and to benchmark themselves, giving them a better understanding of the pacing and difficulty level of the class.

- **Rapid, Anonymous Polling**: helps you take stock of the pace of the class and of student comfort with the material without putting students on the spot. The anonymity of polling gives students a low-stakes forum for students to provide honest feedback. Try asking questions such as: How much time did you spend on the homework? Rate the difficulty of the course content. [Davis, B.G. *Tools for Teaching*, 2nd ed. \(2009\)](#)
- **Take the Class Temperature**: As highlighted in [HGSE's Instructional Moves](#), Robert Kegan uses show-of-hand solicitations to get a quick reading of students' progress. After group activities, for example, he asks students to raise hands if their group came to some conclusions, and then to raise hands if they did not. He can then adapt the rest of the lesson based on these markers of understanding.

Example 2: End-of-Class Feedback Surveys

Save a few minutes at the end of class for students to write brief, anonymous reflections that provide ongoing feedback throughout the semester. Distribute and collect these responses on index cards, or set the questions up as anonymous surveys in Canvas.

- **The Minute Paper**: Ask your students to write for one minute at the end of class about their takeaways from that day: "What are 1-2 significant things you learned today? What questions or confusions remain for you? Any other feedback?" This exercise helps students integrate ideas from class and helps you identify areas of

concern or confusion. [Angelo T.A. & Cross, K.P. Classroom Assessment Techniques, 2nd ed. \(1993\)](#)

- **The Critical Incident Questionnaire**: Ask your students about incidents that most impact their learning, so you can better understand the dynamics of your classroom: “At what moment today did you feel most engaged? Most distanced?” “What actions did anyone (teacher or student) take that were most affirming or helpful? Most puzzling or confusing?” “What surprised you the most today, and why?” etc. [Brookfield, S.D. Becoming a Critically Reflective Teacher, 2nd ed. \(2017\)](#)
- **Pluses and Deltas**: As described in [The Learning Loop](#), HGSE’s Kathy Boudett asks students to spend a few minutes at the end of class defining what has gone well (the pluses) and where there might be room for change (the deltas from the Greek symbol for change). Students discuss in pairs, and then share out in class, allowing her to collect ongoing feedback.

Whatever form of feedback you gather, share some version of the results with your students so they can see the range of experiences within the class.

Clarify your existing pedagogical decisions if you are not going to make changes in response to their input, or let them know when you do make changes so they can tell that their feedback has made a difference. Think hard before making major mid-course changes to the syllabus, however. You will never please everyone and are likely to face backlash. Instead, keep notes about significant changes you’d like to make for next time.

Example 3: End-of-Course Reflections

The Post-Mortem Dialogue: As profiled in [Into Practice](#), FAS faculty Alfred Guzzetti spends the final class meeting of his course engaged in a two-hour, informal post-mortem dialogue with his students where he solicits feedback about their experiences of the course. This allows him to gather feedback to help improve the course as well as gives his students a chance to reflect on their experiences and what they’ve learned over the course of the semester. All of this allows him to gain a deeper understanding than he otherwise could by reading only the course evaluations.