

A Non-Comprehensive List of Formative Assessment Activities (from Scientific Teaching. Handelsman *et al.* 2007)

1. Individual writing (“one-minute essay”): Students are asked to write a short answer (in about one-minute) about a topic or question. Requires students to articulate their knowledge or apply it to a new situation; causing them to evaluate the most important and relevant components of their argument.
2. Think-Pair-Share: Students are asked to think about possible answers to a question individually and then discuss them with a partner and come to a consensus. The agreed-upon answer of the pair of students can then be shared with the rest of the class in a group discussion.
3. Ask questions: elicit student responses to focus thinking on key concepts, issues, and theories.
4. Have a discussion: allow students to express their opinions and ideas and evaluate each other’s thought processes.
5. Concept maps: ask students to developing a graphic representation of several concepts and how they relate. The process of developing a visual arrangement of the relationship between various concepts requires students to evaluate different ways that the terms can relate to each other and to appreciate that a biological process may not be unidirectional or linear.
6. Group-work problem solving: allow students to see how their peers approach and solve problems.
7. Brainstorming: elicits responses from large audience and aggregates them into a single list. It provides the instructor and the students with an overview of the group’s collective knowledge. By separating the brainstorm list into two or more categories, students evaluate how well they understand the role of each response in a specific context.
8. Strip sequence: engage students in recognizing cause and effect and in determining the logical sequence of events. When students derive their own strip sequences, they need to evaluate the critical steps in the process.
9. Case study: cases engage students in solving a problem in a real-life context. To solve them, students need to evaluate what they know about many related topics, apply that knowledge, and determine what additional information is needed to make a recommendation.
10. Statement correction: engage students in evaluating what concepts are misrepresented and in determining what information they need to correct it.
11. Clicker questions: require students to gauge whether they understand a concept or topic thereby engaging students in ensuing activities (eg, lecture) about that topic.