



CPM Principles of Assessment

Teachers understand that students learn at different rates and through different experiences. The CPM materials have been designed to support mastery over time through a student-centered, problem-based course, and this approach supports students' different learning styles. But when changing the materials and changing the methodology, teachers must also change their assessment practices. Teachers cannot tell students they want them to explain their thinking during class and then assess them with only a multiple choice test. Students will quickly realize that "explaining" is not valued enough to be given the time to be assessed.

Along with the type of assessment questions they ask, we want teachers to consider assessment as important as instruction, texts, and activities. Below are CPM's Principles of Assessment.

1: Teachers need to be involved in the crafting of their assessments.

The teacher must create an assessment that complements what students did during class. The teacher is the only one who knows the discussions that occurred in their classroom, the topics that caused the students to pause and explore more deeply, and the areas that were perfectly clear. Though CPM provides sample chapter assessments, the teacher should never administer the sample assessment without careful consideration. Rather, these samples should be used to guide teachers when developing their own assessment. The teacher should never give sample assessments without careful scrutiny. Working with colleagues to develop common assessments is a great learning experience for everyone involved, but even if you are giving common assessments, you may need to adapt the assessment slightly for each class. Adaptations does not necessarily mean "rewriting" but might include letting students use their notes on part of the assessment, or allowing students to select a subset of the problems so that they may demonstrate their strengths. Students can give justifications for their choices.

2: Teachers need to read and work through all assessment items carefully before giving them to students, making sure it is clear what kind of response is expected and that there are no errors.

When a teacher does not take the time to make sure every question is well phrased and is grammatically correct, we cannot be sure we are assessing the student's mathematical ability. If the problems are poorly phrased, a student who knows the math may never have a chance to demonstrate their knowledge if they struggle through trying to make sense of the question. Typographical errors can also cause anxiety and distress. Teachers need to take care to be sure they are making the mathematics the key thing being assessed.

3: Students should be assessed only on content with which they have been meaningfully engaged, and with which they have had ample time to make sense of.

Just because the teacher has told the students something does not mean the students understand it. Students need time to process and make sense of the mathematics they are learning, and it is unfair to assess students for mastery before they are ready. The teacher must also be flexible when assessing because students learn at different rates. Using different methods of assessment allows students to demonstrate their strengths, letting you look for what they know rather than focusing on what they don't know. By balancing skills with problem solving, and revisiting familiar material, assessment can better reflect the student's understanding. By including old material and newer material together on assessments, students can demonstrate how their learning is progressing. And, by allowing for multiple approaches when solving assessment problems, students can show how they understand the mathematics. Formative and summative assessments serve different purposes, and teachers need to be clear when and why they are giving each. The power of formative assessment should not be dismissed. Teachers understand that formative assessment is more than just pre-tests and exit slips. Teachers use formative assessment daily through questioning of students and providing feedback.

4: Formative assessment is a learning experience for both the student and the teacher.

Teachers adapt their questioning and their lessons based on students' responses. While formative assessment is on-going, summative assessment happens less frequently. With both formative and summative assessment, teachers insist that students explain and communicate their methods. Teachers take time to understand the student's approach and to give descriptive, effective feedback to the students on formative assessments to push student learning forward.

5: While teachers are required to evaluate and assign grades to their students periodically during the school year, the grading should be flexible enough to allow for variations in when students master the mathematics.

While some students will have a good knowledge of what is tested at a particular time others may know some things well, but not know others, yet. This is why we recommend cumulative testing with some emphasis on what has recently been learned and more emphasis on what has previously been learned, where there are continuing opportunities to practice and extend, clarify, and consolidate. A grading system needs to be flexible enough to give credit for what students show that they know now, but not permanently punish them for what they don't know yet. If "benchmark" or "mastery assessments" must be given they should be delayed and given after all students have had multiple opportunities to use and practice the new material and show what they know (several months after the material has been introduced).