Teachers assess students after a lesson to determine if learning has taken place and to identify where more work is needed. For early elementary mathematics, the assessment principles are comprised of observing, listening and several sources of evidence. This criterion assists teachers in determining what students are learning and their developmental stage of mathematical concepts. Though known to not be effective, the worksheet is still being used for this purpose in many early elementary classrooms today. This article focuses on a kindergarten classroom and the students’ exploration of sorting, classifying and patterning. A university professor and a teacher work together, providing readers with various activities and assessment devices that can be used instead of worksheets.

At the beginning of the school year, Mrs. Ziemba examines her students’ prior knowledge and “levels of understanding and abilities” when sorting, classifying and patterning (p. 236). This is accomplished through many hands-on activities. Students do not only use traditional manipulatives like pattern blocks and Unifix cubes but also non-traditional manipulatives, such as seashells, buttons and keys. These concrete objects allow students to explore manipulatives, achieve abstract mathematical understanding and create patterns. As groups of students work with these objects, Mrs. Ziemba listens in, asks questions and jots down notes of students’ progress.

Another form of assessment used by Mrs. Ziemba is math journals. In these journals, students can record their findings, their interactions with fellow classmates or the teacher, and/or build patterns and record them via drawings. Some students choose to
write about the color they used in their patterns, the ABC pattern they applied or the
criteria they used to sort objects. As Ziemba states in this article:

Writing is a big component of our kindergarten day, and it is incorporated into
mathematics. It gives my students the opportunity to reflect on their own learning.
I also use their writings and drawings about their mathematics activities as a
valuable assessment tool (p. 237).

Math centers are introduced into Mrs. Ziemba’s classroom in October. Each
activity included in the centers represents a concept being taught in the unit. In order to
keep track of the centers visited by each student, a mathematics folder is handed out.
Inside the folder is a sheet where students can record which
centers they have completed.
By November, students are immersed in patterns: “They have shifted gears from free
exploration of materials to the discovery of patterns and how things fit together” (p. 237).
Paper, pencils and crayons are included at these centers so the children can record what
they created. The teacher can use these examples to assess the students understanding of
patterns, sorting and the complexity they have reached in their creations. Sharing also
takes place at the end of each math class, when students volunteer to talk about what they
have learned. They can share with the class verbally, through drawings or manipulatives.

In my opinion, Mrs. Ziemba’s kindergarten class is quite unique in its activities
and in the way children are assessed. Far from the world of worksheets, students are
given a chance to learn and explore through different senses. The same requirements are
met and assessments are completed but with more freedom and creativity. With such a
hands on approach and a sense of fun, students are not only sure to learn the material but
to also retain it for the grades to come. I can definitely see myself incorporating these ideas into my own lesson plans.
Reference