The perspective of assessment has been changing because of the paradigm shifts in mathematics education. However, positivistic orientation of assessment recognizes externally imposed standardized paper-pencil tests. In this regards, this paper intends to describe the attributes, significance, and strategies of the alternative perspectives of assessment: assessment for/as mathematics learning. Assessment for learning generates the information from the multiple sources and uses to enrich meaningful learning. It mirrors the status of teaching-learning and helps for planning the instructional strategies. Assessment as learning regards assessment as an inbuilt process that focuses on developing metacognitive and higher ordered thinking in students so that they can become self-reflective practitioners, self-assessor of their own learning, and thus making appropriate adjustment to achieve deeper understanding. It signifies that we should rethink the traditional assessment system to transform mathematics education- otherwise, all other efforts that have been endorsed in intended curricula again become constituent factors of the conventional practice perpetuation. Keywords: Assessment for learning; assessment as learning; metacognitive thinking