

## DEFINITION

Academic screening is necessary to meet the needs of all learners and is commonly used in Multi-Tiered Systems of Support (MTSS). It generally occurs 2-3 times per year, using brief paper and pencil or computer-based assessments delivered in the classroom by the teacher.

## WHY IS IT IMPORTANT?

The purpose of academic screening is to (1) evaluate instructional programs to inform resource allocations and guide instructional adjustments; and (2) rapidly detect children who are struggling with grade-level skills so that they may be provided with intervention to promote their success.

### Why is Universal Screening Complicated in Math?

Math proficiency cannot be measured using a single, general outcome measure.<sup>a</sup>

Math proficiency represents mastery of distinct skills and increasingly difficult grade-level content.<sup>b</sup>

General outcome measures lack sensitivity at screening and for progress monitoring.<sup>c, d</sup>

When the screening is too easy for students, those who pass the screening will still be in trouble.<sup>e</sup>

Applying a norm-referenced criterion among low performers causes screening errors.<sup>e</sup>

<sup>a</sup>Foegen et al. (2007)

<sup>b</sup>Powell et al. (2013)

<sup>c</sup>VanDerHeyden et al. (2017)

<sup>d</sup>Solomon et al. (in press)

<sup>e</sup>VanDerHeyden et al. (2019)



## WHAT DO RESEARCHERS RECOMMEND?

For mathematics screening, researchers recommend using **subskill mastery measurement**, which is a form of curriculum-based measurement (CBM). Subskill mastery measures are designed to measure more narrow slices of skills/content, to measure more frequently, and to change the measure as children reach mastery.<sup>c</sup>

Subskill mastery measures are referred to as “Goldilocks measures” because the key to their use is to select the right skill for the right moment of instruction.<sup>d</sup>

### How to Conduct Mathematics Screening

Use measures that are efficient, reliable, and demonstrate predictive validity. Administer in the fall and winter of the school year.<sup>a</sup>

Choose measures connected to grade-level instructional objectives and representative of essential skills that students have been taught.<sup>c</sup>

Use screening data in combination with state testing results in Grades 4 through 8.<sup>c</sup>

Use the same system in all schools so results can be aggregated across schools and analyzed at the district level.

## HOW TO CHOOSE A MATHEMATICS SCREENING MEASURE

1. Choose measures to allow for accurate identification of students who are and are not at-risk with a slight priority for more sensitive measures.<sup>c</sup>
2. Consult the Tools Chart from the National Center of Intensive Intervention (NCII) to identify measures with strong classification accuracy.
3. Evaluate how the screening program will facilitate intervention selection.
4. When risk level is high at screening, implement classwide intervention.<sup>e</sup>

<sup>a</sup>Foegen et al. (2007)

<sup>b</sup>Powell et al. (2013)

<sup>c</sup>VanDerHeyden et al. (2017)

<sup>d</sup>Solomon et al. (in press)

<sup>e</sup>VanDerHeyden et al. (2019)

