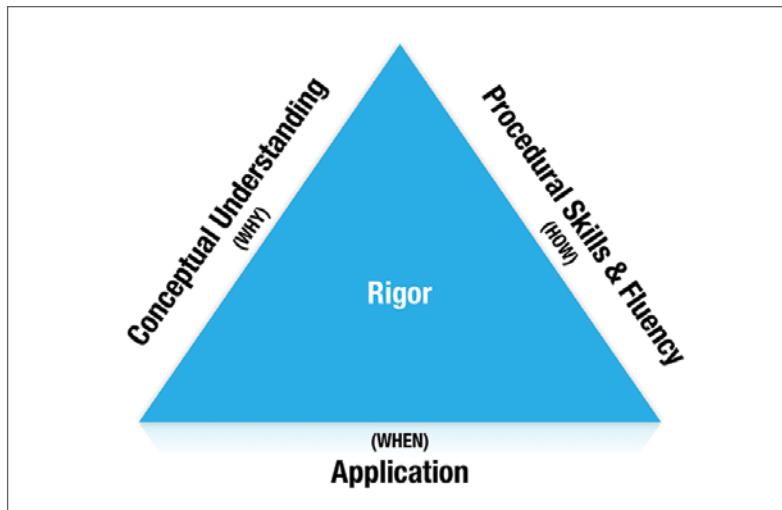ORIGO EDUCATION

Choosing Resources that Balance the Dimensions of Rigor

The Dimensions of Rigor

Math resources should:

- **Facilitate discourse.** Look for activities with open rather than closed questions.

- **Offer multiple visual models.** Look for discrete models, area/array models; length models and number lines. Make sure it doesn't focus too heavily on just one model (e.g. the bar model).

- **Offer experiences with all types of each operation.** Look for a balance of "add to" and "put together" addition; unknown addend, "take from" and comparison subtraction; equal groups, array and comparison multiplication; and grouping and sharing division. Make sure it doesn't focus too heavily on one type (e.g. "take from" subtraction).

- **Provide powerful visual tools.** Look for unique tools that give students a "picture" of the mental strategy or concept being developed (e.g. numeral expanders to teach place value)

- **Delay the introduction of procedures as described in the CCSSM.** Be concerned if you see number facts represented in in the vertical (algorithmic) format in Grade K or 1 – well before algorithms are due to be taught or mastered. This is evidence of misalignment to the Standards.