

# CONCEPTUAL LEARNING PROGRESSIONS

## ***In one sentence***

- This framework creates conditions for teachers and coaches to partner and think deeply about math content, how students might learn the content, and how teachers can assess student learning of the content in effective and efficient ways.

## ***Related research***

- Why learning progressions are important
  - *Transformative Assessment*, James Popham
  - *Principles to Actions: Ensuring Mathematical Success for All*, NCTM
- Resources for how students construct understanding of math content
  - *Elementary and Middle School Mathematics: Teaching Developmentally*. John Van de Walle, Karen Karp, & Jennifer Bay Williams
  - *Young Mathematicians at Work Series*, Catherine Fosnot
- Resources for exemplar problems
  - IllustrativeMathematics.org
  - OpenMiddle.com

## ***How are these learning progressions used by coaches?***

- Deepen and develop content knowledge among teachers
- Horizontally (within a team) and vertically (within a school) align math teaching and learning
- Build teacher efficacy to develop and assess student understanding of math content
- Create opportunities for purposeful, common formative assessment
- In reflection after unit instruction

## ***How are these learning progressions used by teachers?***

- Take ownership of math curriculum and match it to student strengths and needs
- Plan for coherent instruction and assessment and maintain focus throughout unit instruction

# A COACH'S CHECKLIST FOR CONCEPTUAL LEARNING PROGRESSIONS

## **Preparation**

<i>Essential Elements</i>	✓
Read the unit/standards carefully and thoroughly. Become an expert in the math content for the unit; research will be necessary.	
Identify a curricular aim for the unit as well as the subskills and enabling bodies of knowledge that will allow students to reach it.	
Consider your group: where are they at and where will you need to push their thinking?	
Develop a problem set that will elicit and develop teachers' conceptual understanding of content represented by the standards in the unit.	
Create a model progression that might represent a final product of this work.	

## **Facilitation**

<i>Essential Elements</i>	✓
Provide teachers with the standards for the unit and ensure all teachers carefully read through these standards.	
Ask teachers to solve the problems and record "knows" and "dos" for each; monitor and address any trouble spots (gaps in knowledge or understanding).	
Facilitate discussion in which teachers share their solution strategies, knows, and dos; encourage teachers to add to the thinking of others.	
Direct teachers to order the problems in a pedagogically defensive sequence; facilitate discussion around this work and pose coaching questions when appropriate to push thinking of the group and of individual teachers	
Provide teachers with subskills and enabling bodies of knowledge and ask teachers to link problems to a subskill or enabling body of knowledge; monitor teacher work to identify opportunities to further discuss content	
Ask teachers to collaboratively write a curricular aim that summarizes - in a sentence or two - the overarching goal(s) of the unit.	
Organize the group's thinking into the learning progression template	
Identify look-fors and opportunities to write formative assessment items.	

## **Follow Through**

<i>Essential Elements</i>	✓
Identify opportunities to support teacher use of learning progression through co-planning, modeling, co-teaching, and facilitated reflection.	