

BuildingonMOSTs.org



Learning a Teaching Practice Through Representations, Decompositions, and Approximations

Western Michigan University	Brigham Young University	Michigan Technological University
Carlee Madis Joshua Ruk Amanda Seiwell PI: Laura Van Zoest	Alicia Heninger PIs: Keith Leatham & Blake Peterson	PI: Shari Stockero

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## Overview



Mathematical Opportunities in Student Thinking

Brief introduction of the theorized practice Representations (Grossman, et. al, 2009)

#### Decompositions (Grossman, et. al, 2009)

#### On-boarding of Teacher-Researchers

Approximations of Practice (Grossman, et. al, 2009)

Draw on the insight and experience of teachers

## Theorized Building Practice



Mathematical Opportunities in Student Thinking



Making student thinking (of a MOST) an object of consideration for the class in order to engage the class in making sense of that thinking to better understand an important mathematical idea.

#### **Research Retreat**



Mathematical Opportunities in Student Thinking

#### MOST T-R Retreat: Aug. 1-3, 2018, Chicago, IL



#### Representations



Mathematical Opportunities in Student Thinking

# Representations: seeing and understanding the theorized practice

#### Comic Strip 1



#### Representations



Mathematical Opportunities in Student Thinking





### Decompositions



Mathematical Opportunities in Student Thinking

**Decomposition:** breaking down the complexities of the theorized practice into presentable parts TRs were invited into a collective brainstorm of student thinking and potential teacher responses that aligned with the practice of building.



**EXAMPLE:** What student thinking do you anticipate to the following prompt:

Which is bigger x OR x + x?

## Decompositions



Mathematical Opportunities in Student Thinking







#### Approximations of Practice



Mathematical Opportunities in Student Thinking

#### Approximations of Practice: engaging in experiences that simulate the theorized practice



TRs rehearsed enactments of the theorized practice. We modeled our rehearsals on those that have been used with preservice teachers to engage with and unpack new practices (e.g., Lampert et al., 2013; Pfaff, 2017).

Okay, so we felt like the orchestrating part ... I wouldn't say I really fully understood it until maybe the rehearsal. – Mike, reaction to rehearsals

### Approximations of Practice



Mathematical Opportunities in Student Thinking



# Subsequent Phases

M O S T

Mathematical Opportunities in Student Thinking

**MOST Teacher-Researcher MEP Activities 2018-19** 

#### MOST T-R Retreat: Aug. 1-3, 2018, Chicago, IL

Cycle 1		Cycle 2			
Enactment	Small Groups	Whole Group	Enactment	Small Groups	Whole Group
Weeks of Sept. 17 & Sept. 24	Thurs., Oct. 11	Thurs., Nov. 8	Weeks of Nov. 12 & Nov. 19	Thurs., <b>Dec. 6</b>	Thurs., <b>Jan. 24</b>

MEP 1 (MS: Variables/HS: Bike Ride)

#### MEP 2 (MS: Percent Discount/HS: Points on a Line)

Refresher Meeting	(	Cycle 1	Cycle 2		
Small Groups	Enactment	Small Groups	Enactment	Individual Interviews	
Thurs., <b>Jan. 31</b>	Weeks of Feb. 4 & 11	Wed., Feb. 27	Weeks of Mar. 18, 25 & Apr. 1	Apr. 25-May 9	

### Share-out & Questions



Mathematical Opportunities in Student Thinking

 How might or do representations, decompositions, and approximations support your work with teachers or support teacher learning?



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# THANK YOU