

**Collecting diagnostic assessment/clinical interview data to individualize targeted mathematics instruction**

Dr. Mindy Eichhorn, Gordon College

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**Independent Practice: Diagnostic assessment  
Grades 6 – 8**

**Steps as you begin a diagnostic assessment**

1. Choose your probe
2. Research misconceptions aligned with the Common Core State Standard
3. Read the problem to the student (to ensure reading the problem isn't interfering with math skills)
4. Observe
5. Ask probing questions
6. Have manipulatives on hand

Steps	Notes
Choose 1 assessment probe from the approved sources: Estimating Quotients (Tobey & Arline, 2014, p. 28)	Determine the best estimate $22.5 \div 0.54$ $0.683 \div 1.9$ $8.4 \div 0.04$
Determine the correct and incorrect choices (a, b, or c)	$22.5 \div 0.54$ A Between 4 and 5 B Between 40 and 50 C Between 400 and 500  $0.683 \div 1.9$ A Between 0.1 and 0.5 B Between 10 and 50 C Between 100 and 500  $8.4 \div 0.04$ A Between 0.2 and 0.4 B Between 20 and 40 C Between 200 and 400
Find aligning Common Core State Standard	6.NS.B.2 and 6.NS.B.3 Cluster B: Compute fluently with multi-digit numbers and find common factors and multiples  6.NS.2 Fluently (efficiently, accurately, and flexibly) divide multi-digit numbers using an efficient algorithm.

	<p>6.NS.3 Fluently (efficiently, accurately, and flexibly) add, subtract, multiply, and divide multi-digit decimals using an efficient algorithm for each operation.</p> <p>See also 6.NS.1. Interpret and compute quotients of fractions, and solve word problems involving division of fractions by fractions, requiring multiple exposures connecting various concrete and abstract models</p>
<p>Research misconceptions on the assessment probe concept from the <a href="#">Kansas Flipbooks</a> or the <a href="#">MN STEM Teacher Center</a></p>	<p>The difficulties students may have with this task (misconceptions):</p> <p>Source: <a href="#">Kansas Flipbooks – Grade 6</a> (page 36 – 44) Source: <a href="#">MN STEM Teacher Center</a></p>
<p>Anticipate why a student may choose an incorrect response / what might their reasoning be?</p>	<p>22.5 ÷ 0.54 A Between 4 and 5 C Between 400 and 500</p> <p>0.683 ÷ 1.9 B Between 10 and 50 C Between 100 and 500</p> <p>8.4 ÷ 0.04 A Between 0.2 and 0.4 B Between 20 and 40</p>
<p>Why did you choose this particular probe? What difficulties have you seen in your practice?</p>	
<p>What manipulatives you want to have available for the student to explain their reasoning? <a href="#">Math Learning Center</a> <a href="#">Toy Theater</a> <a href="#">Didax</a></p>	
<p>List one probing question you want to ask the student.</p>	
<p>Name one characteristic of a good diagnostic interviewer you want to be sure to use during this assessment.</p>	
<p>Interpreting the data What did you notice about the student’s performance?</p>	

Consider reasoning strategies, use of manipulatives, language, self-esteem, etc.

### Estimating Quotients

Determine the best estimate.	Explain your choice.
1. <b><math>22.5 \div 0.54</math></b> a. Between 4 and 5 b. Between 40 and 50 c. Between 400 and 500	
2. <b><math>0.683 \div 1.9</math></b> a. Between 0.1 and 0.5 b. Between 10 and 50 c. Between 100 and 500	
3. <b><math>8.4 \div 0.04</math></b> a. Between 0.2 and 0.4 b. Between 20 and 40 c. Between 200 and 400	

Tobey, C. R. & Arline, C. B. (2014a). *Uncovering student thinking about mathematics in the common core: Grades 6 – 8*. Thousand Oaks, CA: Corwin.

[Google Books preview](#) (page 2)