

California State University/University of California
MATHEMATICS DIAGNOSTIC TESTING PROJECT
May 9, 2016

Mary Sirody
University of California, Los Angeles
Mathematics Department MS - 2353
Los Angeles, CA 90095-1555
(310) 825-9477
mdtp@ucla.edu

Sample School Summary

Cover Page
Info about the test including the number of items on the test, the topics assessed, and the number of items in each topic.

The MDTP Grade 8 Mathematics Readiness Test recently given to your students includes 40 items in 7 topics. Listed below are the number of items in each topic.

<u>Code</u>	<u>Topic</u>	<u>Number of Items</u>
INTG	Integers	7
FRAC	Fractions, including Applications	4
DECM	Decimals & Percents; Absolute Value	6
PROP	Proportional Reasoning	5
LTEQ	Literals & Equations	7
GEOM	Geometric Measurement & Coordinate Geometry	7
DAPS	Data Analysis & Probability & Statistics	4

The results of this test are presented for the class as a whole, test topics, test items, and individual students. Each student should be given the Individual Student Letter reporting that student's results.

Some reports include the Critical Level for each topic. This is what MDTP considers to be the minimum number of correct responses for a student to show adequate preparation in that topic.

Grade 8 Mathematics Readiness (8R40A15) Test Results Class Results

Results Summary Page

The number of students tested, items on the test, class average score, overall topic averages and critical levels.

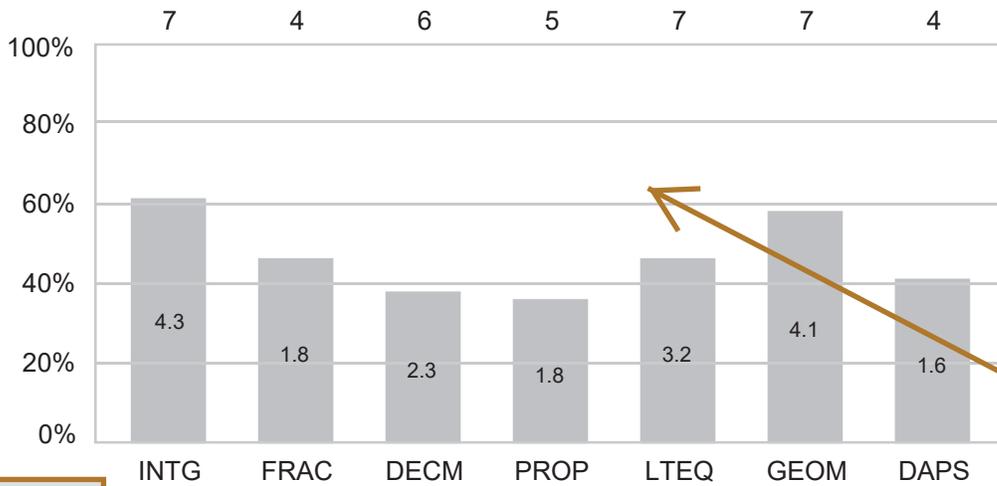
Number of students: 33

Number of items: 40

Average Score: 19.2 (48%)

Class Average Topic Scores

For each topic, the height of its bar displays the average percent correct, the average number of correct responses is printed in its column, and the number of items is printed above its column.



Average topic scores: In this class, students are strongest in INTG, and GEOM, weaker in DECM and PROP. As a teacher, I can use this info to identify some preliminary areas to pursue more deeply. For example, I might want to look into the items in the DECM and PROP domains to start setting some improvement goals, and build on strengths identified in the INTG and GEOM categories.

Critical Level: Students meeting the critical level will need little additional foundational support in the topic area. In this case, 48% of students are well prepared for building on GEOM concepts, only 9% are well prepared for PROP concepts.

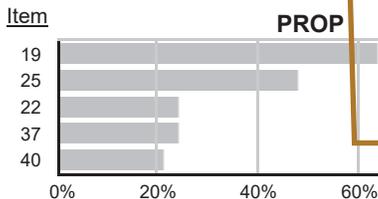
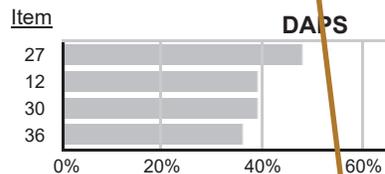
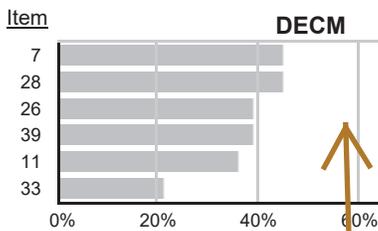
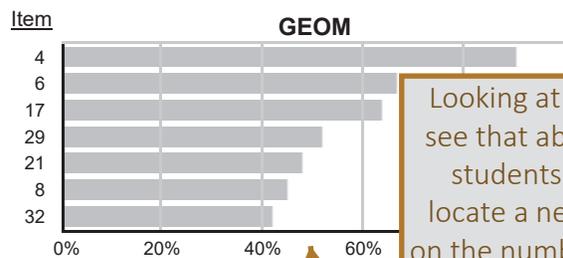
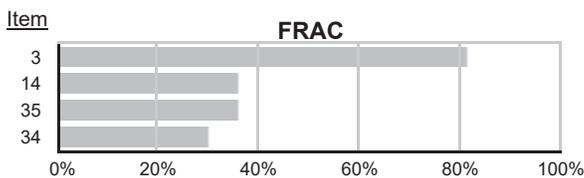
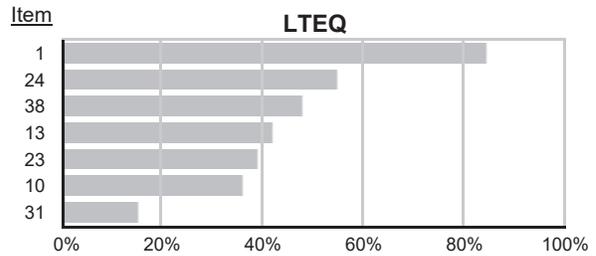
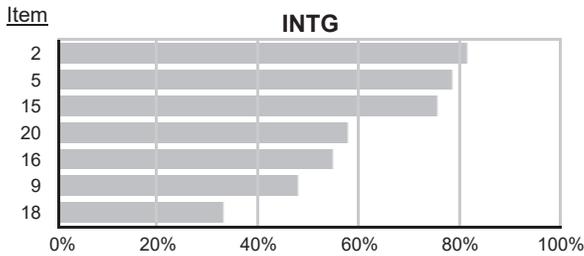
Students at or above Critical Level

Topic Code	Item Count	Critical Level	Students	
			Number	Percent
INTG	7	5	11	33%
FRAC	4	3	9	27%
DECM	6	4	6	18%
PROP	5	4	3	9%
LTEQ	7	5	7	21%
GEOM	7	5	16	48%
DAPS	4	3	6	18%

The Critical Level for each topic is what MDTP considers to be the minimum number of correct responses for a student to show adequate preparation in that topic.

Overall Item
 Averages by Topic

Graphic Display of Class Results
 Grouped by Topic, Ordered by % Correct



From item 33, I see that students have difficulty with adding fractions and finding the decimal equivalent. This problem can be readily answered using number sense. I think I'll give students an open-ended question to help them think about and tell me what they know about adding fractions.

From problem 7, I see that over 40% of the students were able to correctly order numbers represented in different ways: fractions, decimals and negatives. I'll look at the item analysis page to see if I can identify the kinds of errors students are making.

Looking at GEOM items, I see that about 90% of the students were able to locate a negative decimal on the number line (item 4), a little less than 70% were able to find the third angle in in a right triangle. About 65% can calculate the area of a circle given its radius; half can locate a 2nd quadrant coordinate on a graph; less than half can find the height of a box, given its volume and base area; less than half can locate an endpoint on a number line given the other endpoint and the midpoint of a segment. Just over 40% can reason about the side length of a square given indirect info about its perimeter.

To start, I know we are going to be using a lot of graphing in the next unit, I think I'll give students the MDTP written response item COGR to support their coordinate graphing and distance thinking.

Item Analysis
 Shown for each item tested:
 the topic, percent correct,
 the percent of students who
 omit the item, the percent
 of students who chose each
 of the distractors (multiple
 choice options A-D).

California State University/University of California
 MATHEMATICS DIAGNOSTIC TESTING PROJECT

May 9, 2016

University of California, Los Angeles
 (310) 825-9477
 mdtp@ucla.edu

Item Analysis by Percentage of Students

Number of Students: 33

ITEM	TOPIC	CORRECT	OMITTED	A	B	C	D	E
1	LTEQ	85	0	6	<u>85</u>	9	0	0
2	INTG	82	0	9	<u>82</u>	0	9	0
3	FRAC	82	0	3	12	3	<u>82</u>	0
4	GEOM	91	3	<u>91</u>	3	0	3	0
5	INTG	79	0	9	6	6	<u>79</u>	0
6	GEOM	67	3	12	<u>67</u>	18	0	0
7	DECM	45	0	<u>45</u>	24	15	15	0
8	GEOM	45	0	15	<u>39</u>	<u>45</u>	0	0
9	INTG	48	0	6	<u>36</u>	<u>48</u>	6	3
10	LTEQ	36	0	9	<u>36</u>	3	52	0
11	DECM	36	0	0	58	<u>36</u>	6	0
12	DAPS	39	0	0	<u>39</u>	0	61	0
13	LTEQ	42	0	21	<u>42</u>	21	15	0
14	FRAC	36	0	9	36	<u>36</u>	18	0
15	INTG	76	0	12	0	12	<u>76</u>	0
16	INTG	55	0	<u>55</u>	24	6	12	3
17	GEOM	64	3	6	<u>64</u>	12	12	3
18	INTG	33	3	<u>33</u>	45	12	6	0
19	PROP	64	3	15	9	<u>64</u>	9	0
20	INTG	58	3	24	<u>58</u>	9	6	0
21	GEOM	48	3	6	24	15	<u>48</u>	3
22	PROP	24	6	42	<u>24</u>	21	6	0
23	LTEQ	39	3	<u>39</u>	18	24	15	0
24	LTEQ	55	3	9	12	<u>55</u>	18	3
25	PROP	48	3	15	18	15	<u>48</u>	0
26	DECM	39	6	<u>39</u>	39	12	3	0
27	DAPS	48	3	<u>48</u>	27	12	9	0
28	DECM	45	6	9	15	24	<u>45</u>	0
29	GEOM	52	6	15	12	15	<u>52</u>	0
30	DAPS	39	3	18	27	<u>39</u>	12	0

For Item 7, students were asked to order 1/2, 1.2, -2, 3/7. 45 % selected the correct choice A. 24% chose B identifying 3/7 as greater than 1/2; 15% chose C identifying -2 as the largest; 15% chose D which is the same as C, but with 3/7 greater than 1/2. Altogether, 39% say 3/7 > 1/2. Often this kind of misunderstanding arises from students erroneous thinking about the number of pieces in the numerator without considering the size of the denominator. I think I will use the MDTP written response item FRCO, to support and learn more about student thinking.

Item 22 caught my eye, because I noticed that more students selected the incorrect answer A than the correct answer B. In this problem, students are asked to identify the value of k in the proportion $6/10 = 21/k$. Choice A is 25, making the additive relationship between numerator and denominator the same in both fractions ($25-21 = 4$ and $10-6 = 4$). Moving from additive to multiplicative reasoning called for in proportional thinking is often challenging for students. However, this directly connects with the concept of equivalent fractions - a topic essential to working with both proportions and fractions. I'll need to look more into the students understanding of fractions.

California State University/University of California
 MATHEMATICS DIAGNOSTIC TESTING PROJECT

May 9, 2016

University of California, Los Angeles
 (310) 825-9477
 mdtp@ucla.edu

Item Analysis by Percentage of Students

Number of Students: 33

ITEM	TOPIC	CORRECT	OMITTED	A	B	C	D	E
31	LTEQ	15	6	<u>15</u>	24	48	6	0
32	GEOM	42	3	21	<u>42</u>	18	15	0
33	DECM	21	3	15	42	<u>21</u>	12	6
34	FRAC	30	3	6	48	12	<u>30</u>	0
35	FRAC	36	9	27	15	<u>36</u>	12	0
36	DAPS	36	3	12	12	<u>36</u>	36	0
37	PROP	24	6	21	18	30	<u>24</u>	0
38	LTEQ	48	3	15	9	24	<u>48</u>	0
39	DECM	39	3	15	12	<u>39</u>	30	0
40	PROP	21	3	<u>21</u>	24	33	15	3

Omitted indicates either no bubble was filled in or multiple bubbles were filled in.
 The correct response is underlined.

California State University/University of California
 MATHEMATICS DIAGNOSTIC TESTING PROJECT

May 9, 2016

University of California, Los Angeles
 (310) 825-9477
 mdtp@ucla.edu

Individual Student Results

For each student the overall percent correct, their score in each topic and whether they met the critical level in those topics.

Individual Student Results

Average Score: 19.2

	Total	INTG	FRAC	DECM	PROP	LTEQ	GEOM	DAPS	Items Marked	Last Item Marked
	40	7	4	6	5	7	7	4		
	N/A	5	3	4	4	5	5	3		
Andersen, Joey	20	6	1*	2*	2*	3*	5	1*	40	40
Arnold, Jessica	11	2*	0*	2*	3*	0*	3*	1*	39	40
Becker, Malgorzata	8	2*	0*	3*	0*	1*	1*	1*	38	40
Black, Diego	14	3*	3	1*	1*	2*	3*	1*	40	40
Bradley, Ainhua	18	5	2*	2*	1*	3*	5	0*	40	40
Bush, Tommy	10	3*	1*	3*	0*	2*	1*	0*	40	40
Castillo, Tomasz	14	2*	1*	0*	2*	3*	4*	2*	40	40
Christensen, Geoff	21	4*	2*	2*	1*	4*	6	2*	40	40
Clinton, Stephen	32	7	4	4	3*	7	5	2*	39	40
Coleman, Lena	35	7	4*	4	4	4	4	4	40	40
Craig, Oliver	18	4*	3*	3*	3*	3*	3*	3*	40	40
De la Cruz, Ada	19	3*	1*	2*	2*	2*	2*	2*	40	40
Fernandez, Joshua	24	7	1*	2*	3*	5	4*	2*	40	40
Ford, Sharon	8	2*	2*	1*	0*	1*	2*	0*	16	16
Fowler, Steve	23	7	2*	3*	0*	4*	5	2*	40	40
Gallagher, Sherm	13	4*	1*	1*	0*	4*	2*	1*	40	40
Garza, Hannah	23	6	3	2*	2*	3*	5	2*	40	40
Gilbert, Bess	23	4*	1*	3*	3*	5	4*	3	40	40
Gilbert, Matthew	15	4*	1*	2*	0*	2*	5	1*	40	40
Grant, Duncan	18	4*	1*	2*	0*	2*	5	1*	40	40
Grant, Nicolas	30	4*	1*	2*	0*	2*	5	1*	40	40
Griffin, Iris	15	4*	1*	2*	0*	2*	5	1*	39	40
Gutierrez, Katie	24	4*	1*	3*	3*	5	4*	3	40	40
Hall, Lu	14	4*	1*	2*	0*	2*	5	1*	40	40
Haynes, Iris	25	5	4	5	1*	2*	6	2*	40	40

Steve Clinton correctly answered 32 of the 40 questions. I see that he met the critical level in all topics except PROP and DAPS (as indicated by the asterisks). He appears to be particularly weak in DAPS. He also answered 39 of 40 the questions.

Sharon Ford only answered 8 questions correctly, but she appears to have attempted only 16 question. Perhaps her ability is stronger than indicated by her overall percentage. Did she have enough time to complete the test?

Asterisk indicates score below the Critical Level for this topic. The Critical Level for each topic is what MDTP considers to be the minimum number of correct responses for a student to show adequate preparation in that topic.

California State University/University of California
 MATHEMATICS DIAGNOSTIC TESTING PROJECT

May 9, 2016

University of California, Los Angeles
 (310) 825-9477
 mdtp@ucla.edu

Individual Student Results

Number of Students:33

Average Score: 19.2

	Total	INTG	FRAC	DECM	PROP	LTEQ	GEOM	DAPS		
Number of Items	40	7	4	6	5	7	7	4		
Critical Level	N/A	5	3	4	4	5	5	3	Items Marked	Last Item Marked
Obrien, Thelma	24	4*	3	2*	3*	4*	6	2*	39	40
Owens, Luke	11	4*	1*	1*	0*	2*	2*	1*	40	40
Palin, Lucy	17	3*	1*	4	1*	3*	2*	3	40	40
Palmer, Filip	20	4*	2*	2*	2*	3*	6	1*	40	40
Parker, Willy	28	7	2*	3*	4	4*	6	2*	40	40
Peterson, Callum	33	7	4	4	3*	6	5	4	40	40
Porter, Tommy	10	4*	1*	0*	1*	2*	2*	0*	37	40
Reyes, Alvaro	15	2*	2*	1*	4	3*	2*	1*	39	40

Asterisk indicates score below the Critical Level for this topic. The Critical Level for each topic is what MDTP considers to be the minimum number of correct responses for a student to show adequate preparation in that topic.

California State University/University of California
MATHEMATICS DIAGNOSTIC TESTING PROJECT

May 9, 2016

Student Letter

For each student a letter is printed indicating their scores in each of the topic areas. Teacher distribute the letters to the students at their discretion. If requested, letters may also be printed in Spanish.

To: Ainhoa Bradley

Here are the diagnostic results from the "Grade 8 Mathematics Readiness Test", 8R40A15, that you have recently taken. Your Score, the Critical Level, and the Total Possible score for each topic are reported below. The Critical Level for each topic is what MDTP considers to be the minimum number of correct responses for you to show adequate preparation in that topic.

	Your Score	Critical Level	Total Possible
Congratulations! Your results indicate that you have done well in each of the following topics:			
Integers	5	5	7
Geometric Measurement & Coordinate Geometry	5	5	7
However, your results indicate you need review in the following topics:			
Fractions, including Applications	2	3	4
Your results indicate you need substantial review in the following topics:			
Decimals & Percents; Absolute Value	2	4	6
Proportional Reasoning	1	4	5
Literals & Equations	3	5	7
Data Analysis & Probability & Statistics	0	3	4

Your total score is 18 out of 40, which is 45%. We hope you find this information helpful. Please contact your teacher for specific activities and assignments that will aid in any necessary review.