

INSTRUCTIONAL ACTION PLAN AND ASSESSMENT ANALYSIS SHEET

Teacher: Ms. B.

Subject: Math

Grade/Class: 7 & 8

Date: 4/14/10

CUMULATIVE REVIEW OF PROFICIENT STANDARDS: Write the standards you will address with each of the following			
Spiral in HW	Spiral in Do Now	Do Mini-Lesson	Spiral in quizzes or tests
Continue spiral review of number sense, geometry/measurement, and patterns/ algebra as class completes data and probability unit. Mixed reviews will continue to be given with assignments.	Mixed reviews of all strands daily through released MCAS questions in the form of multiple choice, short answer, and open response for “Do Now’s”. In addition, Fridays continue with focus on open response questions.	Mini-lessons will be designated based on student performance (see student lists for remediation). Small group instruction will continue for grade 7 and Math I. In general, for Grade 7- (to represent common trends on MCAS)- a) 7.N.2, 7.M.1 & 7.M.2 proportions and ratios- there will be several questions in all question formats (MC, SA, and OR); b) 7.G.6 transformations- usually some type of question(s) that ask for multiple transformations- first a reflection or multiple flips over x- and y- axis, then a translation or slide; c) 7.N.1 & 7.N.9 fraction, decimal, and percent translation – always an open response question for this. Grade 8- 8.P.3 – a) distributive property- always a minimum of two problems, and always involves one term being negative; b) square roots- 8.N.2 & 8.N.7- always 2-3 applications of this problem involved with order of operations as well as comparing and ordering numbers and recognizing irrational vs. rational numbers; c) Pythagorean theorem 8.G.4- recognizing the diagonals of a rectangle as the hypotenuse and being able to solve for missing sides by using theorem	As both grades continue with final unit of data and probability, spiral review key concepts of number sense and patterns/algebra (which is a huge percentage of overall MCAS test) to maintain student mastery. In grade 7, 85% proficient and grade 8 85% proficient- want to maintain

<u>SMALL GROUP INSTRUCTION:</u> What standards warrant more time for small-group instruction and review?	<u>INSTRUCTIONAL PLAN:</u> How or when will you structure small group instruction?
<p>The same standards for mini-lessons warrant more time for small group instruction to ensure understanding and mastery by students (see individuals and small groups at end of document for students for review)</p> <p>Grade 7- (to represent common trends on MCAS)- a) 7.N.2, 7.M.1 & 7.M.2 proportions and ratios- there will be several questions in all formats (MC, SA, and OR); b) 7.G.6 transformations- usually some type of question(s) that ask for multiple transformations- first a reflection or multiple flips over x- and y-axis, then a translation or slide; c) 7.N.1 & 7.N.9 fraction, decimal, and percent translation – always an open response question for this.</p> <p>Grade 8- 8.P.3 – a) distributive property- always a minimum of two problems, and always involves one term being negative; b) square roots- 8.N.2 & 8.N.7- always 2-3 applications of this problem involved with order of operations as well as comparing and ordering numbers and recognizing irrational vs. rational numbers; c) Pythagorean theorem 8.G.4- recognizing the diagonals of a rectangle as the hypotenuse and being able to solve for missing sides by using theorem.</p>	<p>7th: Mr. C. and Ms. S. will continue to take small groups after the “Do Now” and introduction of daily lesson. In addition, Mr. C. and Ms. S. will continue to address the needs of children one-on-one with homework difficulty as they correct nightly homework the following day. Remediation is immediate with follow-up. Ms. C. will also be available after classes most days for extra small group support for the following students: 7A student names; 7B student names; Math I grade 8 student names.</p> <p>Ms. C., Mr. C., and Ms. S. will also target the individuals and small groups listed below to do pull-outs during non-math periods for additional support in the two weeks leading up to grade 7 math MCAS.</p> <p>8th: Math I: Ms. S. and Mr. C. will continue to work with students in Math I (lower level math class) for targeted intervention. In addition, Ms. C. will do pull-out with targeted individuals as directed by Ms. B.</p> <p>For Math II group (Algebra I), students will proceed with data analysis project that contains data and probability standards and will continue with spiral reviews within “Do Now”, skills periods, and homework. For all other math classes, classes will continue with more direct instruction and small group methods of instruction for data and probability, while addressing topics for remediation.</p>

STANDARDS ANALYSIS <u>WHOLE CLASS INSTRUCTION:</u> What standards warrant more time for whole-class instruction, re-teaching and review?	ANALYSIS OF WHY STUDENTS DID NOT LEARN IT	INSTRUCTIONAL PLAN- WHAT TECHNIQUES WILL YOU USE TO ADDRESS THESE STANDARDS?
Grade 7: 7.M.3- Formulas and procedures for determining	#10 (68% got correct). Students were presented with two parallelograms and two triangles imposed on a	<p>Time will be expanded for math, especially for grade 7 math, through more skills development periods, as well as double math blocks the week prior to testing.</p> <p>Students will review formulas for area (as well as discuss the formulas available on reference sheets) and address common mistakes- a) trying</p>

<p>area and circumference/ perimeter of parallelograms, trapezoids, and circles.</p>	<p>grid to allow them to determine side lengths. They were then asked to determine which two figures have the same area. The majority of the students selected the wrong answer, “B”, by just saying the two triangles had the same area.</p>	<p>to just color in squares or “eye ball” the figures to guess the areas, b) when counting the side lengths using the grid, not starting at 1 once a complete unit has elapsed; merely counting each line on the grid instead of the unit, which will result in the wrong area, c) confusing perimeter and counting units around outer edge with area inside a figure or d) forgetting for the area of triangle to do one-half of or divide in half the product from multiplying the length x width or base x height- this is a very common careless mistake. Students will do sample problems during “Do Now” and address in small groups.</p>
<p>7.M.1- select, convert, and use appropriate units of measurement</p>	<p># 25 (63% got correct). Students were asked to determine the total number of minutes in 0.4 hour. Most students that missed question selected A. 40 minutes (probably looking at .4 and determining they could move decimal two places to get 40 or making an association to the number).</p>	<p>Students will consistently review time measurement equivalents, such as 60 seconds in a minute, 60 minutes in an hour, and 24 hours in a day. The grade 7 MCAS usually asks students to perform conversions and rates based on the knowledge of these. Students will practice this type of problem to see if they can multiply the decimal .4 by 60 minutes to arrive at correct answer of C. 24 minutes. In addition, students will practice questions such as #24 where students were given a time of 1 minute to roll a ball 90 feet and were asked to determine the feet per second.</p>
<p>7.P.2- Evaluate simple algebraic expressions for given variable values (usually involves the opposite of a negative number)</p>	<p>#14- (47% got correct) “What is the value of the expression below when $n = -5$ $-(n + 3)$</p> <p>The correct answer is c “2”, because adding -5 and 3 gives you -2 and then you take opposite (or multiply by -1). If students missed, they overwhelmingly chose B. 2, not utilizing the opposite sign.</p>	<p>Students will consistently spiral review questions involving variables and terms with negative numbers. Teachers will review when substituting a negative number to look carefully for a “subtraction sign” or a negative in front of the coefficient (such as $n = -2$ and solve $5 - n$). In the case of this problem, it can be helpful to have students write “1” beside the negative outside parentheses to remind themselves to do the opposite, which means multiplying by negative 1. This type of problem ALWAYS appears on grade 7 MCAS.</p>
<p>7.N.7 Estimate and compute with fractions, integers, decimals, and percents</p>	<p>#11 (65% correct). Students were asked to identify steps for finding the sale price for a dress with original price of \$78, but then 40% off. Most students who missed chose B. “multiply 78 by .40”- the correct answer was D. “multiply 78 by .40 and subtract this amount from 78”.</p>	<p>On the grade 7 MCAS, students will see a problem like this to test their knowledge of percents. Students will either have to determine sale price or price after tax (they could also see an open response question that combines both). Many students get the first step correct of changing percent to decimal and multiplying by original number. The second step is what many forget, either subtraction for sale price</p>

<p>Grade 8:</p> <p>8.N.2- Define, compare, order, and apply frequently used irrational numbers, such as Square root of 2 and pi</p> <p>8.M.3- perimeter, area, circumference, surface area, and volume</p> <p>8.P.6 Identify roles of variables in slope-intercept equation $y = mx + b$</p> <p>8.P.8- Explain and analyze both quantitatively and qualitatively, using pictures, graphs, charts, or equations-how a change in one variable results in a change in another</p>	<p>#9 (61% got correct). Students were asked to identify the irrational number. They were given 2, $\sqrt{2}$, -.0005, and $\sqrt{16}$. Most students, if they missed it, selected the negative decimal.</p> <p>For #11 many students could get a minimum of 2 points (converting from feet to inches for height of cylinder as well as determining volume). Some students did struggle with part c, where students were given the volume and had to work backwards using algebra with volume formula to determine approximate height.</p> <p>Students were asked to identify y- intercept of equation $y = 4/5 x - 2$. (55% got correct). If students missed, they either selected C. 2, forgetting to include negative, or confused the slope 4/5 with being the intercept.</p> <p>#39 (55% correct). Students were asked to compare the areas of two circles, one with a radius 4 times the size of the smaller circle. The result is that the area of the larger circle is d. "16 times the area" of the smaller circle. Most students, if they missed it, chose b. "the area is 4 times". Students saw how much bigger the radius was and just assumed that number 4</p>	<p>or addition for tax. In addition, some students may have difficulty with this problem as it verbally describes steps, not asking for a final answer. Students will review with real-life application tax and sales scenarios, with constant review that it is a two-step problem. They will also have to deal with a variety of problems where sometimes they identify steps and sometimes they give answer. Vocabulary such as "grand total," "sale price," "original price," and "discount" will be reviewed.</p> <p>There will always be one of these types of problems on the grade 8 test, as well as estimating the answer for a non-perfect square. If students miss this, they usually jump on the number that looks the "most" different to them and MCAS always tries to fool them with a negative decimal. These types of questions will be reviewed and consistently seen during spiral reviews in "Do Now," homework, and "Need to Know" questions.</p> <p>Students will continue to work with several open response and multiple choice problems involving area, volume, and surface area. A particular focus will be placed on having students work with cylinders and rectangular prisms for volume and surface area, and having to work backwards with formula equation to find a missing value such as height when given the volume. This continues to be a struggle for some students as it now involves algebra and multi-step problem as well as measurement.</p> <p>Students will continue spiral review of slope-intercept equation, graphing of these equations, and applications to word problems. For grade 8, this is one standard and skill always present and used to differentiate from grade 7 standards.</p> <p>Students will review what the term "scale factor" means and how it affects the proportion of similar figures (there was another MCAS problem that involved rectangles and a scale factor of 1:5). In addition, students will work with these types of problems with rectangle and circles to substitute numbers into the formulas to see what happens when you actually perform the operations and compare</p>
--	--	---

variable in functional relationships.	is how much it would increase. Instead, they needed to account for the area formula and the radius being squared (4 squared is 16).	the answers. For many students, this is the only way for them to make this abstract concept concrete. Students will continually work with functional relationships in measurement formulas (area is a function of radius and a rectangle has a function of l and w).
8.M.4/ 8.N. 3 Use ratio and proportion in the solution of problems	#26 (67% got correct). Students were asked to determine the number of glasses of punch from a 32-ounce bottle of fruit mix, given that $3\frac{1}{5}$ ounces of fruit mix makes 4 glasses of punch. The difficulty with this problem involved the use of a fraction within the set-up of a proportion.	Many students can set up basic proportions and determine equivalents and conversions, but many students struggle when one of the numerators or denominators for a proportion involves a fraction. The “fraction within a fraction” confuses some students with set-up. Some strategies involve graphically reviewing the set-up, explaining it is okay to have this fraction as one of the four parts of a proportion, or perhaps having students convert fraction to a decimal if it helps them “see” it better visually. Review of common applications such as use with “scale factor” and determining actual height of building vs. blue prints, or having real-life applications of recipes can help students understand and conceptualize more clearly.
8.G.1- Analyze and explain the relationship between the interior and exterior angle sums of polygons.	#30 (45% correct). Students were given a triangle with an exterior angle measurement of 110 degrees and one interior angle of 50 degrees and asked to identify the missing interior angle value (opposite of the supplementary angle to the exterior angle). They would have to determine the missing interior angle, subtracting 110 degrees from 180, then adding 70 degrees to 50 degrees to get 120 degrees as the total known degrees in the triangle. Finally, they need to subtract this amount from 180 to get the missing angle measurement of 60 degrees.	Continue to review released MCAS questions that ask for determining missing angles that involve multi-steps for triangles and quadrilaterals. Teachers will review interior angle sums of these two polygons, 180 degrees and 360 degrees respectively, and then discuss applications to various problems where they will have to use more than one step to solve for missing angles. Again, students will review problem-solving strategies of re-reading questions and determining steps to solve. Finally, students should ask themselves at end, “Does this answer make sense?” The missing angle in this problem is acute, and the answer should be less than 90 degrees. This angle should add up, with other known angles, to equal 180 degrees. If students stopped to check answer using known angle relationships, many would recognize careless mistakes.
8.P.3 Distributive Property (involving negative terms)	#23- Students asked to name equivalent expression for $(-a)(b-c)$, 27% got it correct. If they missed, they chose C. $-ab -ac$ where they did not distribute the negative and change the sign.	Students will see at least two of these types of questions per test. Students will review all associated MCAS problems, including cases where it is all variables, where it is constant and variable terms, and the applications of negatives and recognizing the relationship between $-x(-y) = xy$. If there are two careless mistakes, it involves either not distributing the outside term to second term or not distributing negative sign.

STUDENTS OF MAJOR CONCERN	WHAT THEY NEED MOST HELP WITH?	INSTRUCTIONAL PLAN—WHEN OR HOW WILL THEY GET TUTORED, SUPPORTED, ADDRESSED
<p>Grade 8</p> <p>Student Names (needs improvement students)</p> <p>Student Names (proficient, but are threshold students)</p> <p>Student Name</p>	<p>These students have difficulty with processing and retention. Word problems are extremely difficult for them. Basic skills need to be consistently spiraled as well as strategies reinforced for breaking down problems, particularly open response questions.</p> <p>All of these students can vacillate between proficiency and needs improvement. Many of these students make “simple” mistakes, and would benefit from reviewing strategies for attacking problems and looking at common types of questions and typical mistakes that can lead them astray. For many, slowing down, taking time, and double-checking work can lead them to the proficiency range.</p> <p>Although student made exactly 69% for proficiency, she continually struggles with the vocabulary of math (what a question is asking) and processing during multi-step problems has been an issue for her. This is compounded by focus and retention issues as well as typically “jumping” on an answer or just putting numbers in calculator instead of focusing on what the question is asking.</p>	<p>Students will have small group support during class with Ms. S. and Mr. C. In addition, during skills development time they will practice basic skills and have extra support.</p> <p>Students will continue to receive support from Ms. S. and Ms. M. individually or in small groups for math procedures and language of problems.</p> <p>Continued reinforcement in class and break-out groups during Math I for extra support. Continue to break down word problems and remind students they know the skill, but it is applied differently in the problem. Ms. C. will also make herself available as a support for small groups.</p> <p>Afternoon MCAS preparation sessions will be utilized to review “common errors” and spiral review key number sense and patterns and algebra skills.</p> <p>Ms. S. will continue to meet with student on Tuesdays for extra math support, in addition to the Monday MCAS prep session. Finally, for MCAS, as with this benchmark, student will test with a partner and Ms. S. to ensure that she does not “rush” if those around her finish early.</p>

