2013 STAAR Review Guide Math 6

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Using this Review Guide

- This guide is best used during the week preceding the Math 6 STAAR Exam.
- The guide focuses on common mistakes made by students when answering problems, such as reading questions improperly.
- The guide also includes a calculation component, so students can practice solving expressions and equations before the STAAR exam.
- **This PPT is best used with the accompanying printed guide "STAAR N' U."**

The Week Before – At a Glance

- **Monday, April 15, 2013 (B-Day)**: Finish any Quia.com STAAR Reviews. Complete Practice 1
- **Tuesday/Wednesday, April 16-17, 2013**: Calculation Stations! We will work in class-specific stations on areas of need. Complete Practice 2 on Tuesday and Practice 3 on Wednesday.
- **Thursday/Friday, April 18-19, 2013**: How are we doing? We'll make sure we're checking up on those areas of concern through problem-solving and activities. Complete Practice 4 on Thursday and Practice 5 on Friday.
- **Calculation Station! STAAR Academy on Saturday, April 20, 2013 from 9-Noon**. We'll work on fractions, Order of Operations, Variables, Geometry, and Measurement.

Why Quia?!

- Entering your answers on Quia.com gives you the opportunity to receive INSTANT feedback! Then, you can address areas of concern right away instead of waiting for the teacher to return your graded work.
- **As an incentive, students will receive enhancement credits for each Practice (1-5) and Calculation assignment submitted on Quia.com this week**.
- Remember, if you do not have Internet access at home, you can enter in your answers on the computers during advisory or in the first 5 minutes of class.

What is the best way to study?

- The best way to study is through the method that helps you learn best! That being said, the most effective way to study is to focus on struggling areas while reviewing other areas in order to retain those concepts.
- You can focus on struggling areas by creating flash cards to aid your memory and working on problems to check for understanding.

Where am I now?

- In order to figure out what areas of math you should focus on this week, you should review results from your STAAR Review, RC 1-5, from Quia.com.
- Turn to page 2 in **"STAAR N' U."** Make a list of each area you need to work on based on your results.
- Write your plan for working on your understanding of your identified issues this week.
- There are certain areas, based on each class, which we will review together later this week.

STAAR Calculation Drills

- Each day, you will complete a calculation drill, based on certain math concepts. You should take 5 minutes to complete each drill.

Class-wide Areas of Concern
(1) Comparing and Ordering of Rational Numbers

Step 1: Review the problem. Highlight what the problem is asking you to do (least to greatest, greatest to least, shortest to tallest, fastest to slowest, etc).

Step 2: Convert all of the rational numbers into one rational number. (whatever type you are most comfortable with).

Step 3: Compare and order based on the question and the converted rational number (for fractions, find the LCD, rename the fractions, and compare the numerators. For decimals, compare based on place value).

Step 4: Remember to convert the rational numbers back into their original form before submitting your final answer.

Daily work: Complete one comparing and ordering problem every day.

Class-wide Areas of Concern
(2) Conversion of Rational Numbers

Your guide includes the algorithms for Conversion of Rational Numbers. Although daily Calculation drills include 1 conversion problem, you should do more if you have having issues in this area.

a. Convert 3.6 into a fraction and a percent.

b. Convert 4/7 into a decimal and a percent.

Daily work: Complete one conversion problem every day.

Class-wide Areas of Concern
(3) The Difference Between Factors and Multiples

Factor: Factors are numbers you can multiply together to get another number. For example, 2 and 3 are factors of 6 because 2 x 3 = 6.

Multiple: A multiple is a result of multiplying a number by an integer (not a fraction). 12 is a multiple of 3 because 3 x 4 = 12. **I**f **A**ll **E**lse **F**ails (IAEF), think of a multiple as a product.

c. Find the factors and multiples of 8 and 15

Daily work: Find the factors and multiples of at least two numbers each day.

Class-wide Areas of Concern
(4) The Difference Between GCF and LCM

First, remember that GCF is greatest common **factor** and LCM is least common **multiple**.

Using the Venn Diagram method: (1) find the prime factorization of each number, (2) Create the Venn Diagram, (3) Common factors in the middle, (4) different factors on the outer parts of the circles.

For GCF: Multiply the Middle. **For LCM**: Multiply everything!

IAEF: List the factors or multiples of the numbers, circle the common factors or multiples. For GCF, find the greatest of the common factors. For LCM, find the least of the common multiples.

d. Find the GCF and LCM of 12 and 15

Daily work: Complete a GCF and LCM problem each day.

Class-wide Areas of Concern
(5) Finding the Least Common Denominator (LCD)

The LCD of the denominators is the Least Common Multiple of the Denominators! You can use the Venn Diagram method or Listing the Multiples to find the LCD.

IAEF: Multiply the Denominators to find a common denominator.

Note: Remember to re-name the fractions by multiplying the numerator by the factor used to find the denominator for each fraction.

e. Solve: $4/5 + 2/7$

Daily work: Find the LCD of two or more fractions each day.

Class-wide Areas of Concern
(6) Simplest Form

Simplest Form: When the GCF of the numerator and the denominator of a fraction is 1.

Finding Simplest Form:

Step one: Find the GCF of the numerator and denominator.

Step two: Divide the numerator and denominator by the GCF.

IAEF: Divide the numerator and denominators by factors you know until you can no longer divide them.

Note: You should always reduce fractions (and ratios) to simplest form unless the problem or answer choices tell you to do something differently.

f. What is the simplest form of 48/96?

Daily work: Find the simplest form of a fraction and ratio each day.

Class-wide Areas of Concern
(7) Subtracting Fractions with Renaming

If you have a problem where you have to subtract two mixed numbers and the subtrahend (right part of the expression) is greater than the minuend (left part of the expression), you will have to rename the minuend in order to properly solve the problem. To rename, you take a whole from the whole number and convert it into a fraction with the same denominator as the remaining fraction. (For example 8 = 7 1/1).

IAEF: Convert the mixed numbers into improper fractions, find the LCD (if necessary), find the difference, and then convert back into the mixed number.

g. Solve 4 1/8 – 2 4/5

Daily work: Complete a subtraction with renaming problem each day.

Class-wide Areas of Concern
(8) Order of Operations

If you use PEMDAS, remember that Multiplication and Division are on the same level (go from left to right) and Addition and Subtraction are on the same level (go from left to right).

Note One: Re-write the numerical expression each time to complete a calculation in order to minimize mistakes.

Note Two: If a number is next to parenthesis, that means to multiply.

h. Solve $27 \div 3(16 - 10 + 2) \times 2$

Daily work: Complete an order of operations problem each day.

Class-wide Areas of Concern
(9) Understanding Ratio Word Problems

Remember, the first quantity listed in the QUESTION is the first number listed and the second quantity listed is the second number listed.

Example: In Ms. McGee's class, there are 12 boys and 7 girls. What is the ratio of girls to boys?

Answer: 7 to 12 (girls is listed first in the QUESTION and boys is listed second)

Note: **Highlight** what the question wants you to do and then **WRITE** the words before **PLUG**ging in the numbers.

Daily work: Complete a ratio problem each day.

Class-wide Areas of Concern
(9) Understanding Proportions

A proportion shows that two ratios (or fractions) are equal. If two ratios in simplest form are not equal, they are not proportional. **1/2 = 4/8 but 1/2 ≠ 5/6 (4/8 in simplest form is 1/2)**

Note: To solve a proportion problem, you will have to multiply or divide by the same number across the equal sign. **Highlight** what the question wants you to do and then **WRITE** the words before **PLUG**ging in the numbers.

i. 4 apples cost 3 dollars. How many apples can you purchase for $15?

Daily work: Complete a proportion problem each day.

Class-wide Areas of Concern
(10) Tables and Patterns

One: Review the table carefully. It may skip numbers, etc.

Two: Find the pattern.

Three: Use the table and the pattern to answer the question.

Note: You may see variables, which are letters or symbols used to represent numbers.

Daily work: Complete a problem with tables and/or patterns each day.

Class-wide Areas of Concern
(11) Formulating equations

Remember that variables will be used to represent "unknown" numbers. Use the words and numbers in the problem to set up your question.

IAEF: Review each of the answer choices to see which ones make sense. Solve each one of the answer choices.

Daily work: Complete a problem with equations each day.

Class-wide Areas of Concern
(12) Qualities of Triangles

Triangles can be classified based on angles, sides, or both.

Angles: acute triangles (all angles less than 90 degrees), obtuse triangles (one angle greater than 90 degrees), right triangles (one angle equal to 90 degrees)

Sides: scalene triangle (no equal sides), isosceles (two equal sides), equilateral (all equal sides)

The measure of the three angles in a triangle = 180 degrees. To solve for a missing angle: (1) add the known angles, and (2) subtract sum from 180.

Daily work: Study qualities of triangles and how to solve for missing angles, especially if angles are not numbered.

Class-wide Areas of Concern
(13) Qualities of Quadrilaterals

The measure of the four angles in a quadrilateral = 360 degrees. To solve for a missing angle: (1) add the known angles, and (2) subtract sum from 360.

Know the qualities and shapes of a square, rectangle, rhombus, parallelogram, and trapezoid.

Note: Drawing a diagonal line through a quadrilateral will create two triangles.

Daily work: Study qualities of quadrilaterals and how to solve for missing angles, especially if angles are not numbered.

Class-wide Areas of Concern
(14) Circumference, Radius, and Diameter

Diameter (D) is the distance across a circle through its center or twice the radius.

Radius (R) is the distance from the center to the edge of the circle or half of the diameter.

Circumference (C) is the distance (perimeter) around a circle.

Note: Basic formulas will be on the STAAR chart, but you need to MEMORIZE certain formulas you may see on the exam.

a. You may get a problem where it asks for the diameter if you are given the circumference. **$D = C/\pi$**

b. You may get a problem where it asks for the radius if you are given the circumference. **$R = C/2\pi$**

***if you have to find diameter and you have C and R, you will also have to multiply by 2. If you have to find radius and you have C and D, you will also have to divide by 2.

Daily work: Complete C, R, and D problems every day.

Class-wide Areas of Concern
(14) Perimeter and Area Formulas

Basic formulas will be on the STAAR chart, but you need to use IWPS in order to minimize mistakes.

I = Identify formula

W = Write formula

P = Plug in Numbers

S = solve based on what problem requires

Note: You may need to draw the figure in order to organize your answer.

Remember, area is squared and volume is cubed.

Daily work: Complete perimeter and area problems every day.

Class-wide Areas of Concern
(15) Using a protractor

1. Identify if the angle is acute, right, obtuse, or straight first!
2. Read the protractor depending on the angle's position.

Do a couple of problems to get the hang of it.

Class-wide Areas of Concern
(16) Measurement

1. Conversion units will be available on the STAAR Chart.
2. Set up proportions in order to minimize common calculation errors.
3. For conversion of metric units, remember the mnemonic, King Henry Doesn't **M**ind Drinking Chocolate Milk. (the "M" in "Mind" can stand for meters, grams, or liters).

j. 40 mm = _____ km

Class-wide Areas of Concern
(17) Probability

1. Set up the problem first before solving it!
2. Be prepared to convert fractions into percents based on the probability ratios:

$$\frac{\text{number of favorable trials/possible outcomes}}{\text{number of total trials/outcomes}}$$

*****Study how to set up sample spaces and tree diagrams

Definitions:
simple event: what you want to happen
complement: all outcomes that are NOT the event

Class-wide Areas of Concern
(18) Graphing and Data

1. Know the definitions and **uses** for the following graphs: bar graph, line graph, line plot, circle graph, and stem and leaf plot.

2. Know the measures of central tendency and range:

   Mean (average), Mode (most), Median (middle), Range (highest – lowest)