

6th Grade Math Session

10/24/11



OUR GOALS FOR TODAY ARE:

**TO LEARN AND SHARE STRATEGIES FOR
STANDARDS THAT ARE TAUGHT DURING
THE 2ND AND 3RD QUARTERS.**

Bell Work



- You were given 2 questions from the Item Sample.
- Find the section(s) in your textbook where the standard is addressed.
- Determine if you feel the textbook has practice questions and examples that “look like” the sample question.
- Bookmark the section with your question until later.

Standards



- Look at your 2nd and 3rd quarter standards and choose the 3 standards in which you feel your students have the most difficulty.
- On the posters on the wall, place an x next to the 3 standards that you chose.

“Good” Questions



“When we ask good questions in math class, we invite our students to think, to understand, and to share a mathematical journey with their classmates and teachers alike.”

What are Good Questions?



- They help students ***make sense*** of mathematics.
- They are ***open-ended***, whether in answer or approach. There may be multiple answers or multiple approaches.
- They empower students to ***unravel their misconceptions***.
- They not only require the ***application of facts and procedures*** but encourage students to ***make connections and generalizations***.

What are Good Questions?



- They are ***accessible to all students*** in their language and offer an entry point for all students.
- Their answers ***lead students to wonder more about a topic*** and to perhaps construct new questions themselves as they investigate this newly found interest.

SPI 0606.2.5



Transform numbers from one form to another (fractions, decimals, percents, and mixed numbers).

Item Sample Question:

Mr. Kincaid has a piece of pipe that is 3.08 meters long. Which length is equivalent to 3.08 meters?

SPI 0606.2.5



Calculating Shooting Percentages

Each group goes to a game and follows the directions.

Everyone records the results for every member of the group.

Continue to the next available game until all games are completed.

Complete the rest of the tables.

SPI 0606.2.7



Locate positive rational numbers on the number line.

Item Sample Question:

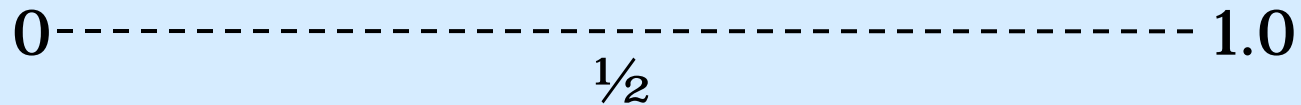
Which number line shows point R located closest to 2.85?

SPI 0606.2.7



Where do the following fractions fit?

$\frac{2}{3}$ $\frac{1}{5}$ $\frac{2}{7}$ $\frac{5}{9}$ $\frac{3}{4}$ $\frac{9}{10}$ $\frac{1}{3}$



Fractions!



Do they understand the concept of fractions?

Clues:

I am less than one-half.

I am greater than one-third.

My denominator is a multiple of three.

I am simplified.

I am _____.

Fractions!



Write a word problem that can be solved with this number sentence:

$$2\frac{1}{4} + 1\frac{1}{8} + 1\frac{1}{2} = 3\frac{7}{8}$$

If you add me to three-fourths, you end up with seven-eighths. What fractional part am I?

Using the digits 1-8, place one digit in each box to satisfy the following: what is the least possible sum? What is the greatest possible sum?

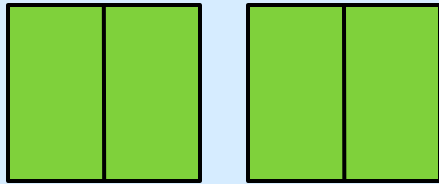
$$\frac{\square}{\square} + \frac{\square}{\square}$$

Fractions!



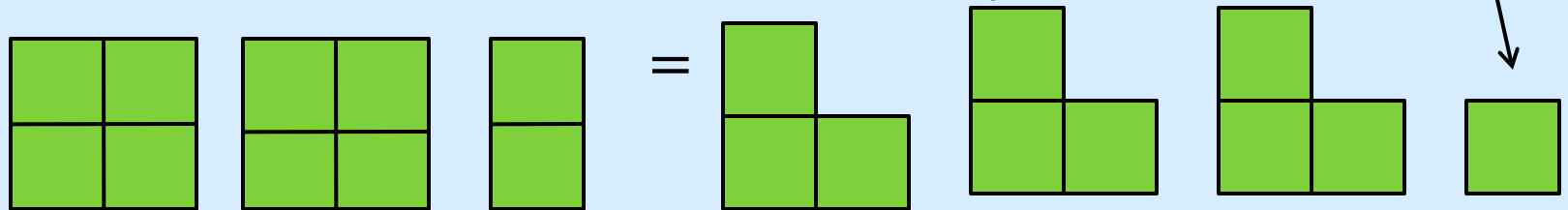
Draw a model to represent $2 \div \frac{1}{2}$

(Hint: Think about how you would model $8 \div 2$)



How many halves do we have?

What about $2 \frac{1}{2} \div \frac{3}{4}$? How many $\frac{3}{4}$?



Remainder:
What part
of $\frac{3}{4}$ is
this?

SPI 0606.2.2



Solve problems involving the addition, subtraction, multiplication, and division of mixed numbers.

Item Sample Question:

A recipe for 1 cake requires $1\frac{3}{4}$ cups of water. How many cups of water are required to make 5 cakes using this recipe?

Good Problem Solving worksheets

SPI 0606.2.4



Solve multi-step arithmetic problems using fractions, mixed numbers, and decimals.

Item Sample Question:

Coretta made 7 pies for a family reunion. During the reunion, $3\frac{1}{4}$ of the pies were eaten. Coretta took $1\frac{1}{2}$ pies to work for her friends. How many pies were left?

SPI 0606.1.2



Judge the reasonableness of the results of rational number estimates and/or computations.

Item Sample Question:

Jordan placed 846 photographs into 12 photo albums. She put about the same number of photographs in each album. Which is the best estimate of the number of photographs Jordan put in each album?

SPI 0606.3.3



Write equations that correspond to given situations or represent a given mathematical situation.

Item Sample Question:

The list below shows the items Seth bought at a grocery store.

- 1 gallon of milk for \$3.88
- 1 loaf of bread for \$1.99
- 1 dozen eggs for \$1.59

He paid for these items with a \$10 bill. Which equation could be used to find c , *the total* amount of change, in dollars, Seth should receive?

What about for fractions?

SPI 0606.2.1



Solve problems that involve the multiplication and division of fractions.

Item Sample Question:

Roberto is making cookies using a recipe. He will use $\frac{1}{2}$ of every measurement listed in the recipe. If the recipe requires $\frac{3}{4}$ cup of water, how much water should Roberto use?

Decimals!



Where do the following decimals fit?

0.86 0.2 0.99 0.49 0.75 0.01 0.6

0-----0.5-----1.0

Mark and give a value to a point for a decimal number that fits each description below.

1-----2

- a point close to, but larger than 1
- a point close to, but smaller than $\frac{1}{2}$
- a point close to, but larger than $1\frac{1}{2}$
- a point close to but smaller than 2

SPI 0606.2.6



Solve problems involving ratios, rates and percents.

Item Sample Question:

Joey solves math problems at a rate of about 3 problems every 7 minutes. He continues to work at the same rate. How many minutes should Joey take to solve 45 math problems?

SPI 0606.2.6



Using Singapore Math

Hot dogs, hamburgers and french fries are being sold at a rate of 3:5:4. 45 hot dogs are sold. Tell how many hamburgers and french fries are sold.

Hotdogs:

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 = 45

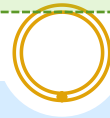
Hamburgers:

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French Fries:

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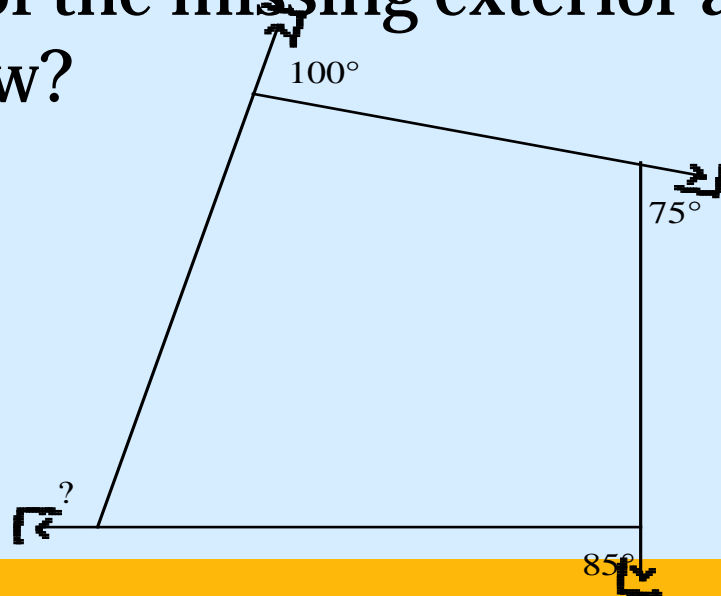
SPI 0606.4.2



Find a missing angle measure in problems involving interior/exterior angles and/or sums.

Item Sample Question:

What is the measure of the missing exterior angle for the figure shown below?



SPI 0606.4.3



Solve problems using the Triangle Inequality Theorem.

Item Sample Question:

The first side of a triangle is 4 centimeters (cm) long, and the second side is 8 centimeters (cm) long. Which of these could be the measure of the third side of this triangle?

Lab page 428

SPI 0606.4.1



Identify, define or describe geometric shapes given a visual representation or a written description of its properties.

Item Sample Question:

3-D question – later

Sorting



As a group, sort the shapes using categories of your choosing.

SPI 0606.3.7



Use algebraic expressions and properties to analyze numeric and geometric patterns.

Item Sample Question:

The table below shows values for x and y .

x	Y
6	12
8	16
10	20
12	24
14	28

Which expression can be used to find y in terms of x ?

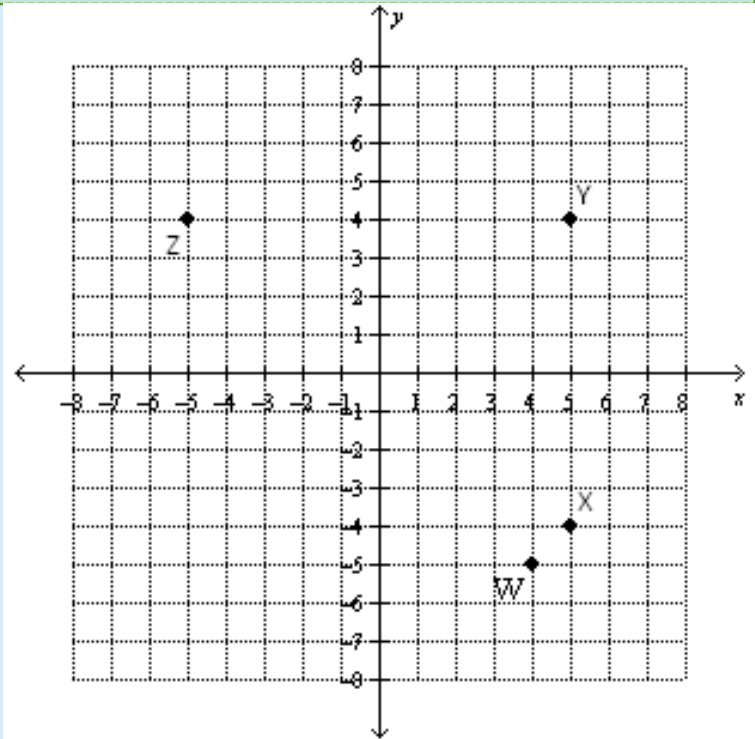
SPI 0606.3.9



Graph ordered pairs of integers in all four quadrants of the Cartesian coordinate system.

Item Sample Question:

Which point is located at $(-5, 4)$ on the grid below?



SPI 0606.4.4



Calculate with circumference and areas of circles.

Item Sample Question:

A circle has a diameter of 30 centimeters (cm).
Which measurement is closest to the area of the circle?

Sketchpad Activity

SPI 0606.4.1



Identify, define or describe geometric shapes given a visual representation or a written description of its properties.

Item Sample Question:

Which characteristic best describes a triangular prism?

SPI 0606.3.2



Use order of operations and parentheses to simplify expressions and solve problems.

Item Sample Question:

What is the simplest form of the expression below?

$$(3^2 + 12)(4^2 \times 2^2)$$

More likely: Find the volume of the cone with diameter of 8 cm and height 10 cm.

SPI 0606.4.6



Given the volume of a cone/pyramid, find the volume of the related cylinder/prism or visa versa.

Item Sample Question:

A cone and a cylinder are shown below.

The cone and cylinder have equal heights and bases of equal area. What is the volume of the cylinder, in cubic centimeters?

$$V(\text{cone}) = \frac{1}{3}Bh$$

$$V(\text{cylinder}) = Bh$$

B = area of the base

$$V(\text{cone}) = 330 \text{ cm}^3 \quad V(\text{cylinder}) = ?$$