



Pottery, Chemistry, and True Colors

Grade 7 Math

Student Name: _____

Date: _____

Activity 1:

The potter is mixing a glaze with dry glaze mix. The potter knows that the relationship between the amount of dry mix and water is proportional. The recipe requires 2,000 grams of dry mix for every 128 oz of water.

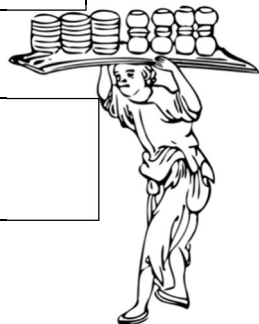
Which of the following combinations of values for the dry mix and water support the assumption that the relationship between the two values is proportional? Circle one.



a.) 200 g of dry mix for 6.4 oz of water	b.) 300 g of dry mix for 12.8 oz of water	c.) 100 g of dry mix for 6.4 oz of water	d.) 100 g of dry mix for 12.8 oz of water
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Write this ratio as the three smallest equivalent fractions.

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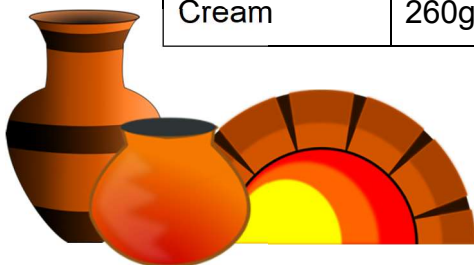
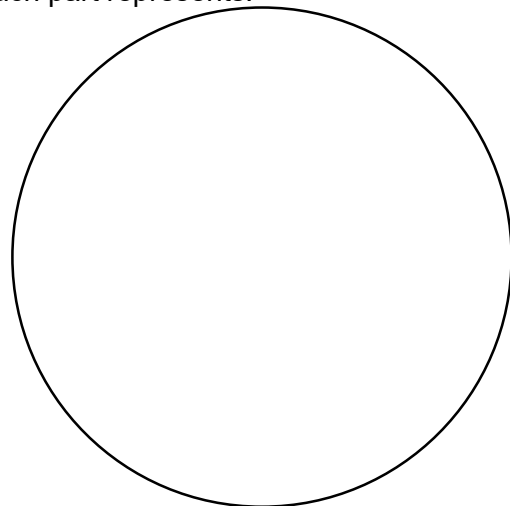


Activity 2:

The potter collected the following data about the dry glazes he uses most often.

Create a circle graph that illustrate the data in the table. Label each part of the circle graph with the correct glaze color and the percent of the whole each part represents.

Glaze colors	Grams
Orange	1000g
Green	520g
Brown	220g
Cream	260g





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Activity 3:

The first table has the ingredients for a glaze mixture. Fill in the second table with the correct grams to create a 2000 g bucket of mixture.

Percentage

(100 g)

Silica	31.03%
Lead	26.82%
Feldspar	19.16%
Kaolinite	13.41%
Chalk	9.58%



Bucket Size

(2,000 g)

Silica	g
Lead	g
Feldspar	g
Kaolinite	g
Chalk	g

Activity 4:

The following is a real recipe from Salem Pottery's glaze manual in 1793. The manual makes use of an ingredient called "tin ashes" which is actually a mixture of lead and tin at the ratio of 3 parts lead to 1 part tin. We now know that the ingredient lead is highly toxic. Using this ratio, look at the recipe below and see if you can determine how much lead is present in the mixture.

"12 lbs. of tin ashes, 7 lbs. of flint, 4.5 lbs. of white English clay, 2.5 lbs. of sodium bicarbonate, 1 lb. of ash, 1 lb. of white glass. These materials are pounded very fine, each separately put thru' a sieve and well mixed together."

Show your work here:

