Name:_____

Moles of Chalk Lab

Introduction: Because atoms are so small, we would need really larger numbers to count them. Working with really big numbers can be frustrating. Because of this, in chemistry we have a unit called a "mole". A mole of atoms means 6.02×10^{23} atoms. (Similar to how a dozen donuts means 12 donuts).

Purpose: To determine the number of moles and formula units of chalk used to write your name.

Materials: Piece of chalk
Electronic Scale

Procedure: 1. Obtain a piece of chalk.
2. Measure and record the mass of your chalk.
3. Write your full name.
4. Again, measure and record the mass of your chalk.

Data:

A	Mass of chalk before writing your name (g)	
B	Mass of chalk after writing your name (g)	
C	Grams of chalk required to write your name (g) **(A – B)**	

Questions (Calculations):

1. Chalk is comprised primarily of Calcium Carbonate. The formula for Calcium Carbonate is $CaCO_3$. How many of which atoms comprise $CaCO_3$?

2. Use your periodic table to calculate the molar mass of calcium carbonate.

Element	**Number of atoms**	**Atomic mass**	**Number of atoms x atomic mass**
Ca			
C			
O			

Molar Mass:	g/mole

3. Calculate the number of moles of chalk used to write your name. Show your work.
   Hint: use the grams of chalk used and the molar mass you calculated.

4. Calculate the number of molecules (formula units) of chalk used to write your name. Show your work.
Hint: use the moles of chalk used and the molar mass you calculated.

Conclusion: Discuss what you learned and sources of error.

Name:_____Period:_____Date:_____

Moles of Chalk Activity

Introduction: Because atoms are so small, we would need really larger numbers to count them. Working with really big numbers can be frustrating. Because of this, in chemistry we have a unit called a "mole". A mole of atoms means 6.02×10^{23} atoms. (Similar to how a dozen donuts means 12 donuts).

Purpose: How many moles of chalk are used to write your name?

Materials: Piece of chalk
Electronic Scale

Procedure: 1. Obtain a piece of chalk.
2. Measure and record the mass of your chalk.
3. Write your full name.
4. Again, measure and record the mass of your chalk.

Data:

A	Mass of chalk before writing your name (g)	
B	Mass of chalk after writing your name (g)	
C	Grams of chalk required to write your name (g) **(A – B)**	

Questions (Calculations):

1. Chalk is comprised primarily of Calcium Carbonate. The formula for Calcium Carbonate is $CaCO_3$. How many of which atoms comprise $CaCO_3$?

2. Use your periodic table to calculate the molar mass of calcium carbonate.

Element	**Number of atoms**	**Atomic mass**	**Number of atoms x atomic mass**
Ca			
C			
O			

Molar Mass: g/mole

3. Calculate the number of moles of chalk used to write your name. Show your work.
Hint: use the grams of chalk used and the molar mass you calculated.