



# UNIT 3: ATOMS, ELEMENTS, MOLECULES

Lesson 14: Holey Moley

# TO DO!

- Turn in Workbook 3.3 (from before the break)
- Take out your binder and check that you have the following:
  - Syllabus
  - Homework Rubric
  - Gray and White Periodic Table

**GUIDING QUESTION:** WHAT IS A MOLE AND WHY DO WE USE IT IN CHEMISTRY?

Do Now (page 2):

- 1) What do you remember about moles?
- 2) Use scientific notation to rewrite these:
  - a) 0.000000054
  - b)  $3.9 \times 10^6$

# WHAT IS A MOLE?



# NOTES

Scientific notation is a convenient way to write numbers that have lots of zeros, either because they are very large or very small.

This is helpful when looking at atoms because a very small amount of substance contains an enormously large number of atoms.

# NOTES

However, keeping track of all those atoms, even using scientific notation is cumbersome so chemists use a unit called the

The mole is simply a counting unit. Just as one dozen is always equal to 12 objects, regardless of what they are, 1 mole is always equal to  $6.02 \times 10^{23}$  objects.

# NOTES

1 mole = Avogadro's number  
= 602 sextillion  
= 602,000,000,000,000,000,000,000  
=  $6.02 \times 10^{23}$

# NOTES

The mass of 1 mole of a substance is called the

## MOLAR MASS

- The molar mass of each element can be found on the periodic table



# CLOSURE

- Mole Posters due Friday (will have time in class)