**Formal Report of Group II**

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**Activity 1. The Mole**

1. **Objective** :

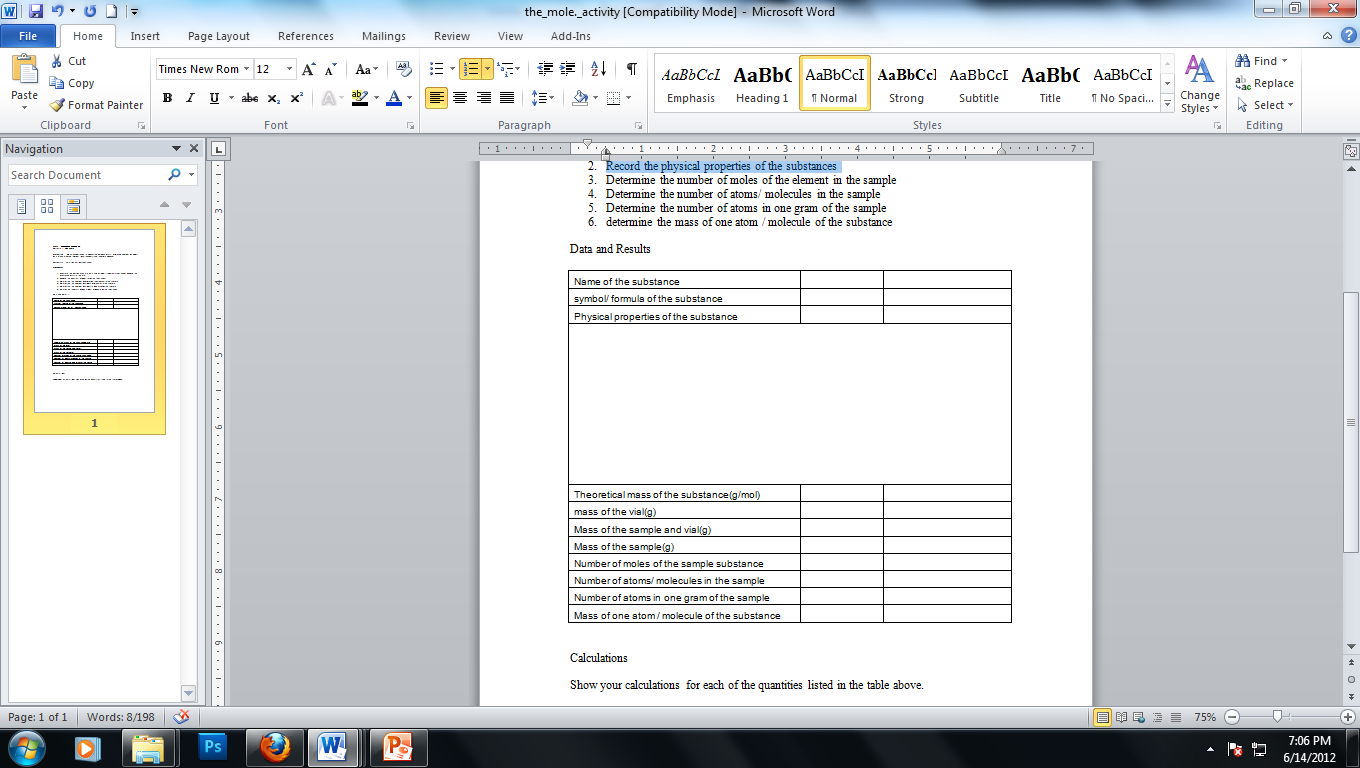
* To gain experience in converting between mass , mole and number of atoms of a given element in order to fully understand the mole concept

1. **Theoretical Background**:

* **Mole** - (abbreviated mol) is the SI measure of quantity of a "chemical entity", which can be an atom, molecule, formula unit, electron or photon.
* A counting unit
* Similar to a dozen, except instead of 12, it’s 602 billion trillion 602,000,000,000,000,000,000,000
* 6.02 X 1023 (in scientific notation)
* This number is named in honor of Amedeo (1776 – 1856), who studied quantities of gases and discovered that no matter what the gas was, there were the same number of molecules present

1. **Schematic Procedure:**

**Materials :** 5 vials of various substances



Record the physical properties of the substances

 Determine the number of moles of the element in the sample.

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Measure the mass of each vial with and without its content (substance). Record the measured mass in the vial

Determine the number of atoms/ molecules in the sample

Determine the number of atoms in one gram of the sample

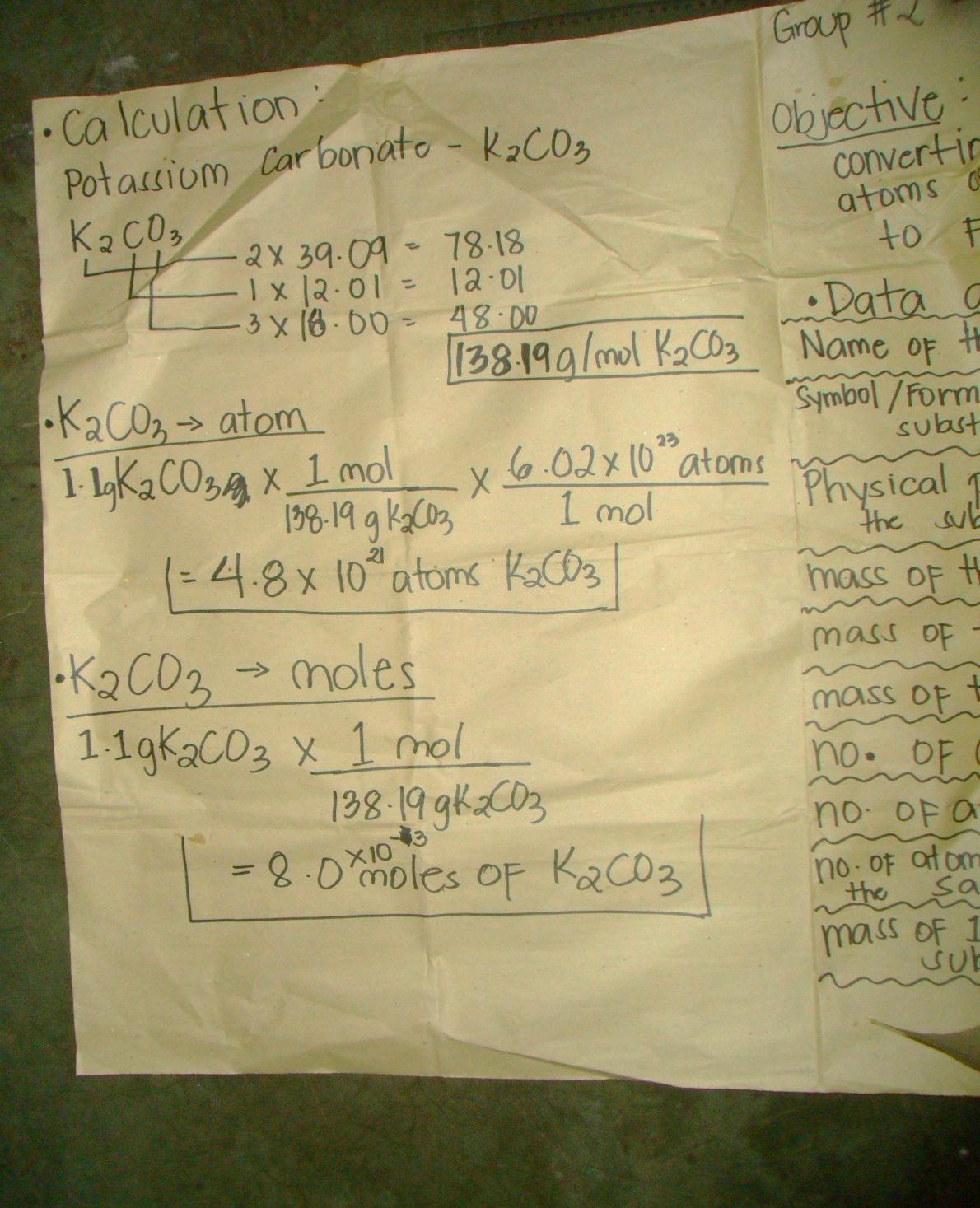
determine the mass of one atom / molecule of the substance

1. **Results and Discussions:**

|  |  |
| --- | --- |
| Name of the substance | Potassium Carbonate |
| symbol/ formula of the substance | K2CO3 |
| Physical properties of the substance | White in color |
| Theoretical mass of the substance(g/mol) | 19.9 g |
| mass of the vial(g) | 21.0 g |
| Mass of the sample and vial(g) | 1.1 g |
| Mass of the sample(g) | 8.0 X 10-3 mol |
| Number of moles of the sample substance | 4.8 X 1021 atoms |

**Calculations:**

Potassium Carbonate – K2CO3

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1. **Conclusion**

* Moles measure quantity of substance.

1. **References:**

* Group 1 formal Report (2011)
* <http://jefstaines.weebly.com/>