

Inquiry C: *The Compounds*

Objective: Students predict and evaluate the chemical formula of neutral compounds.

Time Frame for Activity: 10-15 minute.

Materials: Assorted Legos® (See Inquiry A, Materials).

Procedure:

1. Instruct the students to make bilayer models (described in Inquiry B Procedure 1) using one of the 1X2 or 1X3 Legos® as the base.
2. Choose a couple of groups' models and graphically represent the models on the board.
3. Discuss the structures and the possible additional structures with the students.
4. Instruct the students to predict how many (–) 1X1 will combine with one (+) 1X2, 1X3, or 1X4.
5. Ask the students to predict how many Cl^- will combine with the ions of Ca, Al, or Si. Demonstrate the correlation to the Legos®. (Refer to the Periodic Table and Lego® Organizational Chart)
6. Instruct the students to make a model with 2 (–) 1X2 and 1 (+) 1X3. Ask them to evaluate the model and tell you what is wrong with it?
7. Write AlO_2 on the board and ask the students to evaluate the chemical formula. Correlate this problem to the previous Lego® example.

Formative Assessment:

1. How many chlorine atoms will combine with potassium? Why?
2. What is the correct formula of barium iodide?
3. Is the correct formula of sodium oxide, Na_2O ?