

**Inquiry B: *Elementary Reactivity***

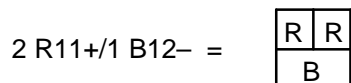
Objective: Students will combine elements to form compounds.

Time Frame for Activity: 15-20 minutes.

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

Procedure:

1. Instruct the students to make 3 models using the Legos® with the restriction that the models have a neutral charge (a positive for every negative) and with no uncoupled receptacles or prongs. Example: a blue 1X2 on top of a white 1X2, two red 1X1 on top of a yellow 1X2, or a blue 1X3 and a white 1X1 on top of a red 1X4.
2. Observe the students' progress and assist groups that are having difficulties.
3. Allow the student enough time to complete the three models.
4. Instruct the students to write a brief non-action description (symbolic, non-graphic) of their models so that another group can reproduce their models. (Example:  $2 R^{1+}/1 B^{2-}$  or  $R^+1_2B^-2$ , not put two red 1X1 on a single blue 1X2. The students should be allowed to develop their own symbolic language.)
5. Once the groups are finished, have them exchange their descriptions with another group and reproduce the other group's models.
6. Ask the students to make notes of any difficulties that they have reproducing the models from the written descriptions.
7. When the students have completed the models have them check the reproduced models with the other group.
8. Ask one of the groups for their descriptions and draw a graphical representation of the models on the board.



9. Using the Organizational Chart of the Legos® drawn earlier and the Periodic Table, relate the Lego® model to a chemical compound. (Example:  $2 R^{1+}/1 B^{2-}$  could be  $Li_2S$ )
10. Introduce the concept of combining positive ions (cations) and negatives ions (anions) in a fashion to give a neutral charge.

**TxCETP Course Component: *Introduction to Periodic Trends* “Lego my Periodic Table”**

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Formative Assessment:

1. Will Calcium combine with Magnesium to give a neutral compound? Why?
2. List five elements that could combine with sulfur to form chemical compounds.
3. What is a cation? Give an element that would form a cation?