

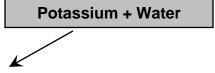
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## **Compare and Contrast the Reactions of Lithium and Potassium with Water**

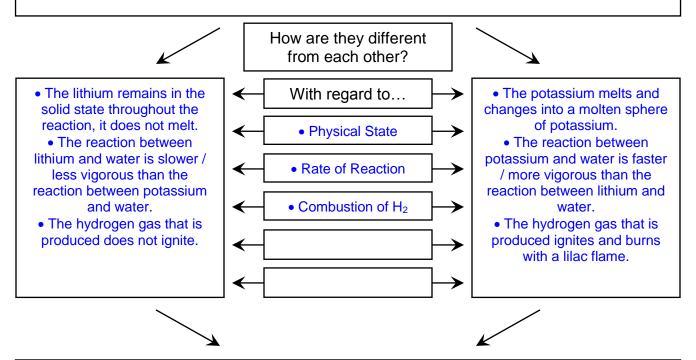
(Robert Swartz and Stephen Fisher)

Lithium + Water	
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How are they similar to each other?



- Both lithium and potassium are less dense than water and therefore float on the surface of the water.
  - Both lithium and potassium move about on the surface of the water.
    - Both lithium and potassium react vigorously with cold water.
- Effervescence is observed when both lithium and potassium react with cold water (hydrogen gas is produced).
  - Both lithium and potassium produce a soluble, alkaline reaction product (LiOH and KOH).
- The reactions of lithium and water and potassium and water are both exothermic (energy is released causing, an increase in temperature).



## Conclusions:

- There are many similarities between the reactions of lithium and potassium with cold water. Both lithium and potassium are in Group I of the Periodic Table and have similar chemical properties due to the similarities in their electronic configurations i.e. they both have one electron in their valence shell and therefore react to form cations with a single positive charge.
- The main differences in the ways that lithium and potassium react with cold water is to do with the *rate* of the reaction. Potassium is more reactive than lithium, and the trend is that the reactivity of the Group I metals *increases* upon descending the Group.