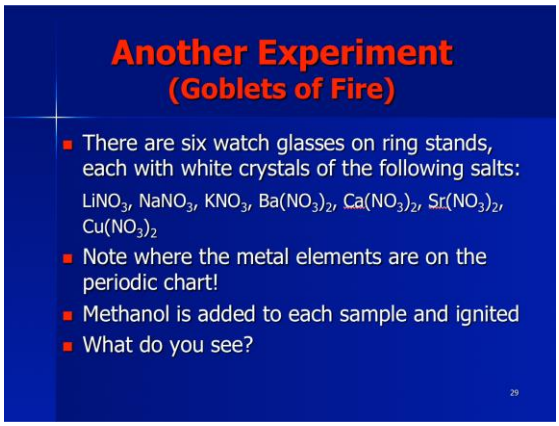
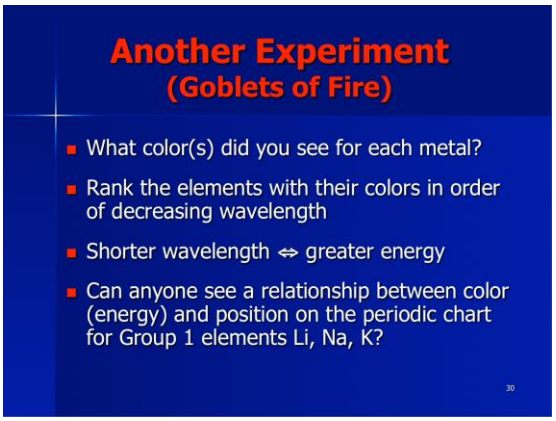
Goblets of Fire Demonstration





1. Set up 6-7 watch glasses on ring stands, each with white crystals of the following salts:
    - $LiNO_3$
    - $NaNO_3$
    - KNO_3
    - $Ba(NO_3)_2$
    - $Ca(NO_3)_2$
    - $Sr(NO_3)_2$
    - $Cu(NO_3)_2$

2. Soak the salts in methanol and then light them - the heat from the burning methanol excites outer shell electrons in the metal ions that then release photons! It's always amazing to the viewers that the salts are still there after the flame dies down.

3. Have your students identify the metal ions in flame crystals by first identifying colors emitted from known ions. Li emits crimson, Na emits yellow, K emits violet, Ba emits green, Ca emits brick red, Sr emits bright red, Cu emits blue-green.

4. The methanol burns (combusts) while the salts remain unchanged (or perhaps recrystallized). More methanol can be added and the salts used in the demonstration again.