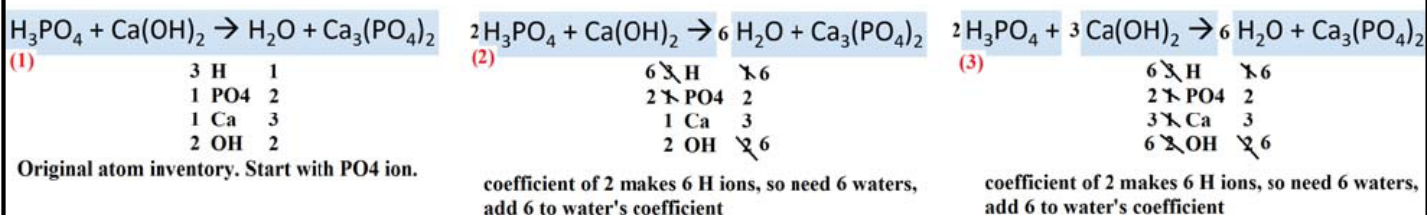


Polyatomic Example

- Remember this guideline when polyatomic ions are present (and don't react (break up) in the reaction)
 - Treat polyatomic ions as "units" (unless reaction breaks them up), try balancing oxygen last and hydrogen second to last.
 - When OH (hydroxide) makes water, treat water (H₂O) like HOH
- Balance: $\text{H}_3\text{PO}_4 + \text{Ca}(\text{OH})_2 \rightarrow \text{H}_2\text{O} + \text{Ca}_3(\text{PO}_4)_2$
- Trying to count individual atoms makes this a very hard problem
 - Note, 14 oxygens on both sides, you can count the individual atoms to verify this method works...treating water like HOH is a little tricky, but makes the number of steps much easier than counting each atom by itself



"1/2" as coefficient example (combustion)

- Remember this guideline when using 1/2 will balance the equation
 - If you can balance completely using 1/2 as coefficient, do it and then multiply everything by 2
- Balance: $\text{C}_4\text{H}_{10} + \text{O}_2 \rightarrow \text{CO}_2 + \text{H}_2\text{O}$
- This is pretty straightforward, but "trick" makes it easier

