Here is the activity series of metals. The “top dog” is lithium and the runt or least liked is gold.

Use this table to understand what element can be replaced to determine if a single replacement reaction will actually take place.

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| --- | --- | --- |
| **Activity Series of Metals:**  Lithium  Potassium  Barium  Strontium  Calcium  Sodium  Magnesium  Aluminum  Manganese  Zinc  Chromium  Iron  Cobalt  Nickel  Tin  Lead  Hydrogen  Copper  Mercury  Silver PlatinumGold | **Predicting Products of Single Replacement reactions.**  Zn + HCl 🡪  BaCl2 + Mg 🡪  Cu + HCl🡪  AlCl3 + Ca 🡪  Fe + HCl 🡪  Cal2 + Fe 🡪  Sn + KCl 🡪  MgCl2 + Na 🡪  AgF + Mg 🡪  Au + Na2SO4 🡪 | Determine if the reactions will take place.  Hint: Can the element replace the cation in for compound? Is it ranked higher?  Yes… Zn + 2HCl 🡪 ZnCl2 + H2  No. Barium is more reactive than Mg  No. Hydrogen is more reactive than Cu  Yes… 2AlCl3 + 3Ca 🡪 3CaCl2 + 2Al  Yes…2Fe + 6HCl 🡪 2FeCl3 + 3H2  No. Calcium is more reactive than Fe  No. Potassium is more reactive than Sn  Yes… MgCl2 + 2Na 🡪 2NaCl + Mg  Yes… 2AgF + Mg 🡪 MgF2 + 2Ag  No. Gold is least reactive and can’t replace. |

**Your turn to determine if a reaction will take place:** Yes or No

1. All3 + Fe 🡪 No reaction aluminum is more reactive
2. CaF2 + Ba 🡪 Yes it will replace
3. MgCl2 + Fe 🡪 No reaction magnesium is more reactive
4. Hl + Zn 🡪 Yes it will replace
5. Cul2 + Fe 🡪 Yes it will replace
6. Cal2 + Fe 🡪 No reaction calcium is more reactive
7. FeCl2 + Li 🡪 Yes it will replace
8. CaS + K 🡪 Yes it will replace
9. NaF + Ag 🡪 No reaction sodium is more reactive
10. H2S + Mg 🡪 Yes it will replace