# Virtual Lab – Creating a Metal Activity Series

## Complete the following doc using the link below.

**The metal activity link is:**

https://teachchemistry.org/classroom-resources/metals-in-aqueous-solutions-simulation

**Activity 1 – Reaction of Magnesium, Zinc, Copper, and Silver**

**Observations:**

Did Mg react with $Zn^{2+}$ Yes, $Cu^{2+}$ Yes, $Ag^{+}$ Yes?

Did Zn react with $Mg^{2+}$ No, $Cu^{2+}$ Yes, $Ag^{+}$ Yes?

Did Cu react with $Mg^{2+}$ No, $Zn^{2+}$ No, $Ag^{+}$ Yes

Did Ag react with $Mg^{2+}$ No, $Zn^{2+}$ No, $Cu^{2+}$ No?

Based on these observations, create a metal activity series with the four metals, with the most reactive metal at the top.

Mg - Magnesium

Zn - Zinc

Cu - Copper

Ag - Silver

**Activity 2 – Reaction of Iron, Tin, Lead, Nickel**

**Observations:**

Did Fe react with $Sn^{2+}$ Yes, $Pb^{2+}$ Yes, $Ni^{2+}$ Yes?

Did Sn react with $Fe^{2+}$ No, $Pb^{2+}$ Yes, $Ni^{2+}$ No?

Did Pb react with $Fe^{2+}$ No, $Sn^{2+}$ No, $Ni^{2+}$ No?

Did Ni react with $Fe^{2+}$ No, $Sn^{2+}$ Yes, $Pb^{2+}$ Yes?

Based on these observations, create a metal activity series with the four metals, with the most reactive metal at the top.

Fe - Iron

Ni - Nickel

Sn - Tin

Pb - Lead

**Activity 3 – Reaction of Zinc, Copper, Iron, Lead**

**Observations:**

Did Zn react with $Cu^{2+}$ Yes, $Fe^{2+}$ Yes, $Pb^{2+}$ Yes?

Did Cu react with $Zn^{2+}$ No, $Fe^{2+}$ No $Pb^{2+}$ No?

Did Fe react with $Zn^{2+}$ No, $Cu^{2+}$ Yes, $Pb^{2+}$ Yes?

Did Pb react with $Zn^{2+}$ No, $Cu^{2+}$ Yes, $Fe^{2+}$ No?

Based on these observations, create a metal activity series with the four metals, with the most reactive metal at the top.

Zn - Zinc

Fe - Iron

Pb - Lead

Cu - Copper

**Create a metal activity series with the eight metals examined so far, with the most reactive metal at the top.**

Magnesium (Mg)

Zinc (Zn)

Iron (Fe)

Nickel (Ni)

Tin (Sn)

Lead (Pb)

**H+ - Hydrogen**

Copper (Cu)

Silver (Ag)

**Part 4 – Reaction of Tin, Zinc, Nickel, Copper, Lead, Iron with $H^+$**

**Observations:**

Did Sn react with $H^+$ Yes?

Did Zn react with $H^+$ Yes?

Did Ni react with $H^+$ Yes?

Did Cu react with $H^+$ No?

Did Pb react with $H^+$ Yes?

Did Fe react with $H^+$ Yes?

**Place $H^+$ in the appropriate spot in your activity series, based on the above observations.**