



High School Science Virtual Learning

College Chemistry

Properties of Materials Virtual Lab

May 4, 2020



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Lesson: May 4, 2020

Objective/Learning Target:

Students will observe and draw conclusions about the properties of metals through a virtual lab.

Let's Get Started:

1. If you put a more reactive metal into a solution containing less reactive metal ions, what will occur?
2. If you put a less reactive metal into a solution containing more reactive metal ions, what will occur?

Let's Get Started: **Answer Key**

1. If you put a more reactive metal into a solution containing less reactive metal ions, what will occur?
A single displacement reaction will occur, and the less reactive metal ions will return to their elemental metal state. (e.g. Iron in a Cu^{2+} solution will cause copper metal to form)
2. If you put a less reactive metal into a solution containing more reactive metal ions, what will occur? **No reaction will occur, assuming the metal does not react with water.**



Lesson Activity:

Directions:

1. Watch this [video](#) from Flinn.
2. Fill out this [lab worksheet](#). Click [here](#) for the data.



Practice

Complete the following questions using the information you learned during the lesson activity.

Questions:

1. Silver and gold were both discovered over 6,000 years ago, while aluminum was not discovered until 1825. Why might aluminum have been harder to discover?
2. Why do you think magnesium is not used for jewelry?
3. Usually, a metal being highly reactive is undesirable because it will rust/tarnish easily. When would a high reactivity be useful?

Once you have completed the practice questions check with the **answer** key.

1. Aluminum was harder to discover because it is very reactive. Because of this, it is difficult to return it to its pure metal state.
2. Magnesium is not used because it would react too easily, causing it to tarnish or rust quickly.
3. High reactivity would be useful when you need a single displacement reaction. For example, aluminum's high reactivity allows it to polish less reactive silver.



Additional Practice:

This [video](#) shows some of the properties of potassium, which has very different properties from the potassium ions in bananas.