



# Chem!stry

Name: ..... ( )

Class: .....

Date: ..... / ..... / .....

## Formative Assessment – Metals

**Instructions:** Read the information about the five metals given below and then answer the questions that follow.

Name of Metal	Symbol	Charge on Cation	Properties
Ariel	Ae	+2	There is no observed reaction when the metal is added to dilute hydrochloric acid. This metal can displace Rapunzel from its compounds, but it cannot displace Mulan from its compounds.
Cinderella	Cn	+1	This is a soft metal with a relatively low melting point. The metal floats on water, reacting vigorously to produce an alkaline solution and hydrogen gas. The metal can only be extracted from its oxide by electrolysis.
Jasmin	Ja	+2	The reaction between this metal and cold water is extremely slow, but vigorous effervescence is observed when a small piece of the metal is added to dilute hydrochloric acid.
Mulan	Mu	+3	This metal can be extracted from its oxide by heating with carbon, but it cannot be extracted from its oxide by heating with hydrogen. This metal can be displaced from its compounds by Jasmin.
Rapunzel	Rp	+1	The carbonate of this metal readily undergoes thermal decomposition to form the pure metal, carbon dioxide gas and oxygen gas.

1. Arrange the five metals in order of reactivity, from the most reactive metal (first) to the least reactive metal (last).

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2. Write a balanced chemical equation for the reaction between Cinderella and water.

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3. Write a balanced chemical equation for the thermal decomposition of Rapunzel carbonate.

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4. Write the ionic equation for the reaction between Ariel and Rapunzel nitrate.

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5. Suggest possible identities for these fictitious metals based upon the modern Periodic Table.

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- Scan the QR code below for the answers to this assignment.



[http://www.chemist.sg/metals/reactivity\\_series\\_ans.pdf](http://www.chemist.sg/metals/reactivity_series_ans.pdf)